DEATH ATTITUDES IN INSTITUTIONALIZED ETHNICIALLY DIVERSE ASIAN AND HAWAIʻIAN/ PACIFIC ISLAND ELDERS

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ABSTRACT

With the exponential growth of the aging population and the rise of ethnic diversity within the U.S. population, there is a need for research to focus on how this population adjusts to the impending end of physical life. More attention is needed on what it means to be dying and what factors affect death attitudes in ethnically diverse geriatric individuals, particularly in those who are facing their own mortality.

The present study was a partial replication of a previous study conducted by Daaleman and Dobbs (2010) and investigated potential meaningful relationships between death attitudes with demographic variables, mental and physical health indices, social support, spirituality, and intrinsic religiosity in chronically ill older adults. The present study used archival data from a previous University of Hawai‘i at Mānoa IRB-approved research study conducted by the author from 2012-2013, which included data collected from 69 institutionalized elderly participants from five nursing homes and an assisted care facility on the island of O‘ahu in the State of Hawai‘i, U.S.A.

Descriptive analyses indicated significant differences between the community-dwelling participants from the Daaleman and Dobbs (2010) study and the present study’s institutionalized participants. Results from correlational, regression, and ANOVA procedures indicated significant differences in death attitudes based on demographic and health variables and reported levels of spirituality and religiosity. Older adults with greater spirituality and intrinsic religiosity had significantly more positive death attitudes. Additionally, Buddhist, Japanese, married, or male elders reported significantly lower approach acceptance of death compared to Catholics, Filipinos, African Americans, Hispanics, widows, or females.

Findings from the present study have important theoretical and practical implications in numerous fields of study and practice. These results indicate that ethnicity, religious/ spiritual affiliation, marital status, and gender are important demographic variables to consider when examining death attitudes within a multi-ethnic elderly population, even among Asian and Hawai‘ian or Pacific Island cultures. Further investigation and exploration into the role of cultural and religious/ spiritual beliefs will undoubtedly be valuable in gaining a better understanding of factors related to death attitudes in ethnic minorities. Potential implications and recommendations for the application of these findings are discussed.

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BACKGROUND

Background on the present study includes discussion of several topics related to the aging population in the United States (**Aging Population in the United States** subsection**)**, empirical (**Death Attitudes: Research** subsection) and theoretical (**Death Attitudes: Theory** subsection) research on death attitudes, and studies examining several significant correlates of death anxiety (**Death Anxiety and Its Correlates** subsection) (**Ego integrity**, **Self-efficacy**, **Spirituality**, **Intrinsic religiosity**, **Physical and psychological health**, and **Perceived social support**).

Aging Population in the United States

In the United States, the population is aging exponentially; in 2010, 40.3 million (13.0%) of the U.S. population was 65 years and older, larger than any other recorded decennial census (U.S. Census, 2010). With a 15.1% increase from a decade ago, the percentage of older adults in the total U.S. population has consistently been trending upwards. The rapid pace at which the aging population is moving far surpasses the 9.7% growth of the total U.S. population (U.S. Census, 2010).

As the population continues to age, the rate of chronic and progressive diseases are becoming more common. In adults over the age of 80, the number of deaths attributed to diseases of the heart increased 60% and cancer-related deaths increased 200%, from 1970 to 2002 (Jemal, Ward, Hao, & Thu, 2005). In 2007, the seven leading causes of death in the U.S. (listed in order of highest to lowest prevalence) were diseases of the heart, cancer, accidents, cerebrovascular diseases, diabetes mellitus, chronic liver diseases, and chronic lower respiratory diseases, accounting for approximately 65.9% (89,343) of deaths in the U.S.; six of the seven causes being long-term illnesses (Center for Disease Control [CDC], 2011). It is important to note that accidents were the leading cause of death in individuals 40 years and younger, accounting for

only 8.7% (11,723) of total deaths in the U.S. (Jemal et al., 2005; CDC, 2011). While, in adults between the ages of 40 and 74, the leading cause of death was cancer (Jemal, et al., 2005).

With the prevalence of chronic diseases on the rise and the growing aging population, the experience of death and dying has undoubtedly evolved. There has been limited research studying death attitudes in chronically ill older adults (Fortner & Neimeyer, 1999). Additionally, with the increase in life expectancy in both males and females in the U.S., estimated at 77.7 years in 2006, there is a greater likelihood of individuals living a substantially longer part of their lives managing their chronic diseases (Arias, 2010). As such, more attention is needed on what it means to be dying and what factors affect death attitudes in the elderly, particularly in those who are facing their own mortality.

Death Attitudes: Research

In the mid-20th century, the death awareness movement began to gain momentum as more academic and social interest in death and dying emerged to the forefront (Doka, 2003). During this time, scholars began to develop theoretical frameworks on death and dying, as well as publish death studies that would serve as a foundation for future fields of research, practice, and academia (Doka, 2003). With the proliferation of death studies, many studies looked at the relationship between death perceptions and age, scores of which began to yield contradictory evidence. Several theories and empirical studies on death attitudes were based on the implication of approaching older age and its influence on death anxiety, defined as the pervasive fear or threat of death that is experienced in daily life (Neimeyer, 1994).

The first known empirical study that assessed death attitudes in older adults was by psychologist Herman Feifel (Neimeyer, Wittkowski, & Moser, 2004). Intuitively, investigators tended to associate an increase in death anxiety with age and this assumption was initially

supported by Feifel's (1956) early work. Using unstandardized measures from a small sample of war veterans, he asked participants to identify when death anxiety normally occurred during the lifespan (Neimeyer et al., 2004). Results indicated that there was support for the general assumption that death anxiety peaked with older age (Feifel, 1956).

With the introduction of stronger psychometric measures in large-scale studies, investigators began to find results that conflicted with the pioneering work by Feifel (1956). Almost twenty years after his initial work, even Feifel altered his initial conclusions about the relationship between age and death anxiety. Feifel and Branscomb (1973) found that individuals, aged 50-79, reliably reported less death anxiety compared to their younger counterparts (10-49 years old). The work produced in the years following were indeed more extensive, yet no common ground was established when it came to the evaluation of death attitudes and age. Some research results concluded that there was no significant correlation between age and death anxiety (Cicirelli, 1999; Conte, Weiner, & Plutchik, 1982; Drolet, 1990). Others found that older adults nearing death came to terms with dying, and the fear and anxiety associated with death were somewhat allayed (Cicirelli, 2001; Fortner & Neimeyer, 1999; Harrawood, White, & Benshoff, 2008; Rasmussen & Brems, 1996; Russac, Gatliff, Reece, & Spottswood, 2007). But, there were still conflicting findings among the studies that found a negative relationship between age and death anxiety. Some pointed to a curvilinear pattern in which there was a peak in death anxiety around middle age (from 20s through 50s), which then declined as individuals approached elderly age (60-85) (Russac et al., 2007). While, other studies found a negative linear relationship, as age increased, death anxiety decreased (Feifel & Branscomb, 1973; Fortner & Neimeyer, 1999; Harrawood et al., 2008; Rasmussen & Brems, 1996).

Death Attitudes: Theory

The question of how we understand the theoretical framework of death has long eluded us. The concepts of life and death are shaped by the human mind and as such, its many facets make it difficult for current theory and research in the field to unanimously agree. Even within the field of medicine, there is no clear definition of either, life or death. Death has commonly been defined in medical dictionaries as the cessation of all vital bodily functions, including heartbeat, breathing, and brain activity (Marcovitch, 2009). However, near-death experiences are observations of individuals who have died, according to the medical definition, and subsequently recovered and are alive but report observations that would have been impossible if they were medically dead (e.g., van Lommel, 2010). Therefore, it can be inferred from the conflicting results in this field that the mental representations of life and death are not static; that there is still more we can do to contribute to the enhancement of life and the suppression of death anxiety in the individual and for society (Drolet, 1990). Even with these hurdles, work in the field of death and dying continued to persist throughout the mid-20th century. Scholars heeded its call by publishing numerous theoretical and practical paradigms to aid in the understanding of human attitudes and behavior toward the inevitability of death (Doka, 2003).

One of the most influential theories proposed during this time was by Elisabeth Kübler-Ross (1969), who identified five stages in which an individual must undergo in the journey of death. The first stage in this journey begins with the denial of one's own death and the rejection of what will inescapably happen to us all. The refusal to accept death evolves into a state of anger and resentment towards death in the next stage. This then progresses into an attempt to delay the inevitability of death, aptly called bargaining. From this third stage, the individual then prepares for the mourning of one's own death and the reconciliation of the loss of others in the

past and those that will come in the future by experiencing a depressive phase; finally, leading to the quiet acceptance of our impending death. Kübler-Ross explained that by understanding and anticipating these stages, one would be able to lift the burden of death by connecting with others. Her well-received work served as a main foundational base for future studies in its field by emphasizing the multidimensional nature of death and the fluidity of individuals' attitudes as we move through the stages of our limited lifespan.

Further work on death attitudes began to make headway as death theory and research burgeoned. Researchers started to move away from the original idea of viewing death as a single global concept and began to explore its multidimensional nature (Cicirelli, 1999). The idea of 'living' our death, coined as a death system, is based on our own conceptions of personal mortality, conceptions based on factual and theoretical factors (Kastenbaum, 2000). More obvious to us are the factual factors of death systems, how we understand death through exposure, experience, and bereavement. Theoretical factors, on the other hand, are our perceived control over death and forces of nature, and what it means to be human (Kastenbaum, 2000). Tomer and Eliason's (2000) model of death attitudes expanded upon this theory of death systems, in which, they identify "coping mechanisms" that impact how an individual self-defines and connects with the world. By reviewing and planning one's life, identifying with one's culture, and following a self-transcending process, an individual then has the ability to exert positive self-beliefs and greater self-control over one's own thought processes (Tomer & Eliason, 2000). By exerting more control over one's thoughts and actions, a theoretical factor of death systems, one will have a better platform to adapt to the changes (e.g., aging and chronic disease) associated with death.

These perspectives are congruous with the theoretical framework presented by Solomon,

Greenberg, and Pyszcynski (1998) in Terror Management Theory (TMT). TMT is derived from Becker's (1973) early work examining the pervasive role mortality plays in an individual's life, and provides a psychodynamic view of how an individual processes and copes with the awareness of death. TMT suggests that individuals are motivated by the potential terror of one's own mortality and this awareness influences their psychological processes and the construction of a worldview (Solomon et al., 1998). Additionally, it posits that this concern and awareness of death engenders the construction of cultural beliefs, which is thereby modulated by an individual's ability to making meaning in life and through self-esteem.

Therefore, death systems do change and do not come from a "treasury of universal and infallible truths," but rather is shaped from a network of personal, social, spiritual, religious, philosophical, and psychological values and practices, measured by death attitudes (Kastenbaum, 2000, p. 4; Morgan, 1995). Take, for example, an individual living in a society filled with war and violence, and how that individual differs from another living in a peaceful society. The consistent exposure to death in the individual living in the war-torn society will undoubtedly shape a starkly different death attitude and understanding of life and death than his counterpart, based on the factual aspects of a death system. We must also take into account how theoretical factors play a role in death systems. An individual's worldview and how one fits in it can be individually- or collectively-based (Morgan, 1995). Whether we, as a society or as an individual value individual uniqueness or a collective community, alters how we view ourselves as human beings and how we fit into nature and the world. Different cultures and societies have different perspectives on how nature and humans interact with one another. Are we an integral part of nature or does nature control how we take part in this world? These factors ultimately change our perception of what it means to be human and give way to a different realization of life and death.

Death Anxiety and Its Correlates

Understanding how individuals view life is important in providing insight into how individuals perceive death, and vice versa (Wong, Reker, & Gesser, 1994). An individual's perception of death is multi-faceted, just as the concept of death itself. Death anxiety or the fear of death is a specific, conscious, and existential fear of loss associated with death, which can be for a variety of reasons: loss of self and/or others, fear of the unknown and/or believed known, or fear of pain and suffering (Wong et al., 1994). Death acceptance, on the other hand, is the ability to come to terms with one's own mortality, the final stage in the journey of death (Kübler-Ross, 1969; Wong et al., 1994). Approach acceptance, specifically, is the positive affective reaction to the confrontation of facing one's own death (Wong et al., 1994). Death anxiety or the fear of death is therefore, intertwined with death acceptance and approach acceptance. Thus, stemming from an existential perspective, death attitudes are rooted in an individual's pursuit for personal meaning to one's life and death (Erikson, 1963; Wong et al., 1994).

Ego integrity.

Erik Erikson's psychoanalytic approach to exploring development throughout the lifespan underscored the importance of achieving ego integrity in order to face death without fear (Erikson, 1963). Built upon Sigmund Freud's five stages of psychosexual development, each life stage is successive and qualitative, with the emergence of a crisis in each. The success with which the demands of any stage are resolved lays the groundwork of resilience or vulnerability for the resolution of any future crises; these choices built upon the previous ones. In the last stage of development, the individual must find a resolution between ego integrity and despair. The unsuccessful resolution of this crisis, the inability to achieve ego integrity by developing a sense of despair in the retrospection of one's own life, has been identified in the literature as the

strongest predictor to reliably affect levels of death anxiety in adults over the age of 50 (Fortner & Neimeyer, 1999). Lower ego integrity in older adults was significantly correlated with higher levels of death anxiety ($r = –.30$, $p < .05$) (Fortner & Neimeyer, 1999). Those with higher ego integrity are those who are able to look beyond the self, connect with the environment and the time in which one lives, and find meaning in one's own life. Strong ego integrity emphasizes self-healing and greater psychosocial maturity ($R^2 = .07$, $p < .001$), and the elevation of the ego status ensures its unifying function by allowing the individual to take on a positive approach to one's behavior and conduct, thereby reducing death anxiety, above and beyond age as a significant predictor ($R^2 = .02$, $p < .05$), (Rasmussen & Brems, 1996).

Self-efficacy.

Self-efficacy and spiritual health efficacy, the ability to generate and promote inner strength from one's experiences, self-perception, and spiritually-based faith to overcome challenges, have also been shown to be formidable predictors of death fears (Bandura, 1997; Fry, 2003). In a sample of men and women over the age of 65, self-efficacy measures accounted for the highest percentage of variance in both, fear of dying and fear of the unknown after death, compared with other hypothesized predictors (i.e., demographics, social support, and physical health) (Fry, 2003). In the male sample ($n = 121$), self-efficacy measures accounted for a significant increase in explained variance in fear of the unknown ($\Delta R^2 = .37$) and fear of dying ($\Delta R^2 = .38$). Similarly, in the sample of women ($n = 167$), self-efficacy accounted for a significant increase in explained variance ($\Delta R^2 = .41$ and $\Delta R^2 = .34$, respectively, in fear of the unknown and fear of dying). Spiritual health efficacy emerged as a significant predictor of fear of the unknown ($\beta = –.39$, $p < .001$) and fear of dying ($\beta = –.38$, $p < .001$) in the female sample, with higher spiritual health efficacy associated with lower scores on both self-report measures of

fear of the unknown and fear of death.

Spirituality.

Growing empirical evidence has mounted in support of the hypothesis that spirituality has beneficial effects on coping with a terminal illness, specifically reducing feelings of hopelessness and despair in cancer patients (n = 160) at the end-of-life (McClain, Rosenfeld, & Breitbart, 2003). The measure of spiritual well-being in this study included two subscales: meaning and faith. The meaning subscale is designed to evaluate the individual's sense of inner harmony and the faith subscale is designed to measure the strength of one's religious beliefs. The total score of the spiritual well-being measure (r = –.68, p < .0001) and the two subscales of meaning and faith (r = –.67, p < .0001 and r = –.55, p < .0001, respectively) were significantly correlated with hopelessness. Terminally ill oncology patients with greater spiritual well-being, as measured by a stronger sense of meaning and faith in one's life, tended to have less hopelessness and despair. Additionally, spiritual well-being was the strongest predictor of hopelessness (β = –.56, p < .0001), while controlling for the effects of depression, social support, physical functioning, and symptom count.

Additionally, cardiac patients who successfully underwent cardiopulmonary resuscitation (CPR) had lower scores on fear of death measures and higher scores on measures of spiritual-related attitudes (i.e., sense of inner life meaning, understanding of purpose in life, interest in spirituality, and belief in life after death) at 2-years and 8-years following CPR (van Lommel, van Wees, Meyers, & Elfferich, 2001). van Lommel and colleagues (2001) conducted a prospective study with 344 cardiac patients (M_{age} = 62.2 years, SD = 12.2) from ten Dutch hospitals and determined that 18% (n = 62) of these patients experienced a near-death experience (NDE) during a cardiac arrest, and assessed for subsequent life-changing experiences and

perspectives (i.e., views on self-image, concern about others, materialism, social issues, religious and spiritual beliefs, and fear of death attitude), as compared to matched controls (n = 282). The controls were resuscitated cardiac patients who did not experience an NDE and were matched with those who reported an NDE, by age, sex, and time interval between CPR and longitudinal follow-up assessments. An NDE was broadly defined as self-reported memory of an existential experience (e.g., out-of-body, seeing a tunnel, light, or the deceased, life review, etc.) during a period of insufficient blood flow, medically referred to as 'clinical death.' Patients who experienced an NDE, in comparison to their matched controls, had significantly lower fear of death ($p < .01$), significantly higher scores on items measuring understanding purpose of life ($p < .05$), sense of inner meaning in life ($p < .05$), interest in spirituality ($p < .05$), belief in life after death ($p < .01$), understanding oneself ($p < .05$), appreciation of ordinary things ($p < .0001$), and interest in meaning of life ($p < .05$), as well as significantly more positive social attitudes [acceptance of others ($p < .05$), showing own feelings ($p < .05$), more loving/ empathetic ($p < .01$), understanding of others ($p < .01$), and involvement in family ($p < .01$)]. These results suggest that individuals who have experienced a serious medical condition or a potentially life-threatening illness report enduring changes in their perspective of life and death, and those who experience an NDE have significantly greater meaning and understanding of one's life, a construct related to spirituality.

Thus, it is reasonable to posit that the theoretical factors of spirituality and intrinsic religiosity will have similar effects on death attitudes, as do ego integrity and self-efficacy. Spirituality has most commonly been defined as a personal search for faith and meaning (Breitbart, 2001). Some researchers have defined spirituality as an individual's efforts to reach a variety of sacred and existential goals in life, whether it be meaning, wholeness, inner potential,

and/ or interconnectedness with others and with nature (Doyle, 1992; Goldberg, 1990). Peteet (1994) has characterized spirituality as "viewing the human condition in a larger and/ or transcendent context and therefore, concerned with the meaning and purpose of life and with unseen realities, such as one's relationship to a supreme being" (Peteet, 1994, p. 237). The concept of spirituality can be captured via self-constructs of self-efficacy beliefs, the ability to generate inner strength and belief in oneself in order to overcome perceived challenges, and via the domain of life schemes, making sense of one's role and purpose in life thereby, developing a sense of coherence in the meaning of one's own life and promoting the construction of meaningful life schemes (Frey, Daaleman, & Peyton, 2005). As meaning-seeking creatures, individuals are geared towards making sense of one's own biological and social roles in life. Those who are able to make sense of the fact that one will survive even after death, through one's progeny and through the social connection with one's culture, tend to have lower death anxiety (Drolet, 1990).

Generating meaningful life schemes has been significantly associated with lower death anxiety among oncology patients, older adults, and cardiac patients who have survived cardiac arrest (Ardelt, 2003; Rappaport, Fossler, Bross, & Gilden, 1993; Tang, Chiou, Lin, Wang, & Liand, 2011; van Lommel et al., 2001). In 219 Taiwanese cancer patients, a greater sense of purpose in life was found to be significantly predictive of lower death anxiety ($\beta = -.41$, $p < .001$), accounting for 21% of the variance (Tang et al., 2011). Furthermore, among older adults, significant correlations were found between purpose in life and death attitudes (Ardelt, 2003; Rappaport et al., 1993). Rappaport et al. (1993) found a significant negative correlation between purpose in life and death anxiety ($r = -.33$, $p < .01$). Similarly, in a sample of 103 adults over the age of 58, purpose in life was negatively correlated with fear of death ($r = -.28$, $p < .01$), and

positively correlated with approach acceptance of death (r = .23, p < .05) (Ardelt, 2003). Purpose in life was also found to be a significant predictor of fear of death (β = –.37, p = .001), with a greater sense of purpose in life associated with less fear of death in older adults. Cardiac patients also reported lower fear of death 2-years after successful CPR, and these positive changes were more apparent at 8-years post-arrest (van Lommel et al., 2001). Those who experienced an NDE (n = 23) during the time of a cardiac arrest had a total score of -47 on the fear of death items of the Life-Change Inventory Questionnaire (Greyson & Ring, 2004) at a 2-year follow-up, which subsequently reduced even further to a score of -63 at an 8-year follow-up, with lower scores indicating less fear of death. Consistent with this pattern, cardiac patients who did not experience an NDE (n = 15) also experienced a decline in fear of death from a total score of -16 at 2-years to -41 at 8-years. This progressive reduction in fear of death in both, individuals who experienced an NDE and those who did not, was consistent with their reported increase in scores on items measuring purpose in life, sense and interest of inner meaning of life, and understanding oneself. These increased scores were evident during both follow-up time periods, with reports of greater purpose and meaning in life at 8-years post-cardiac resuscitation, irrespective of an NDE experience.

Intrinsic religiosity.

In addition to the spirituality construct, some researchers also identify the construct of intrinsic or subjective religiosity. Intrinsic or subjective religiosity is defined as self-reported faith and closeness to God. It has played a more significant role in shaping death attitudes compared to the nature of religiousness, also known as extrinsic religiosity (e.g., religious services attendance, observation of religious rules, etc.) (Downey, 1984; Wink & Scott, 2005). Research on the correlation between death anxiety and extrinsic religiosity have been more

inconsistent in comparison to its relationship to intrinsic religiosity, with varying results indicating a curvilinear relationship, no linear relationship, or a positive relationship (Ardelt, 2003; Azaiza, Ron, Shoham, & Gigini, 2010; Downey, 1984; Duff & Hong, 1995; Wink & Scott, 2005).

Past studies have shown significant differences in death attitudes based on religious affiliations (e.g., Catholicism, Christianity, Protestant, Jewish, Islam, Buddhism, etc.) (Cohen & Hall, 2009; Cohen et al., 2005; Dezutter et al., 2009; Gibbs & Achterberg-Lawlis, 1978; Iammarino, 1975). In a study conducted by Dezutter and colleagues (2009) with 471 Belgian adults (*M*age = 46 years, *SD* = 15.38, range = 17-91), results indicated that religious attitudes (*Catholic*, *n* = 380, 80.7%; *Protestant*, *n* = 1, .2%; *Non-Believers*, *n* = 78, 16.6%; *Unreported*, *n* = 12, 2.5%) significantly predicted fear of death attitude, $F(6, 423) = 23.92$, $p < .001$, and approach acceptance of death attitude, $F(6, 419) = 57.60$, $p < .001$. Specifically, they found that individuals with strong Catholic religious beliefs had significantly lower fear of death and higher approach acceptance of death attitude, beyond age and subjective health. Thus, it can be inferred that individuals from Catholic faiths had significantly more positive affect towards death due to the assertion that these individuals have a belief in the possibility of a desirable afterlife.

Moreover, stronger intrinsic religiosity has been more consistently associated with lower death anxiety in older adults (Ardelt, 2003; Cicirelli, 1999; Cicirelli, 2002). Intrinsic religiosity among older adults was significantly correlated to approach acceptance of death attitudes ($r = .81$, $p < .01$), and had a positive effect on approach acceptance ($\beta = .74$, $p < .001$) (Ardelt, 2003). In a sample of 388 elders, Cicirelli (1999) found that out of all the inter-correlations computed for background variables and psychosocial variables (i.e., age, gender, socioeconomic status, social support, and ethnicity) with reported fear of death, the strongest correlation was with

intrinsic religiosity ($r = –.45$, $p < .01$). Intrinsic religiosity emerged as a significant predictor of both, fear of the unknown ($\beta = –.43$, $p < .01$) and fear of the known ($\beta = –.12$, $p < .05$), with greater intrinsic religiosity associated with less overall fear of death (Cicirelli, 2002). This may be due to the theoretical notion that having a stronger sense of faith is indicative of having a greater sense of the self and a firmer view of the afterlife through religious and spiritual beliefs, which serve as buffers against the fear of death and thereby, also promotes approach acceptance of death attitude (Wink & Scott, 2005).

In light of the mounting evidence, it is not only logical, but it is also crucial to investigate the constructs of spirituality and intrinsic religiosity, as well as religious and/ or spiritual beliefs and attitudes (e.g., religious/ spiritual affiliation) when examining the factors associated with death attitudes. These constructs provide further insight into an individual's perception of life and death, which in turn, can affect the outcomes of death attitudes in older adults. Other potential mediating and moderating factors influencing the relationship between spirituality, intrinsic religiosity, and death attitudes should also be explored. Health and functional status, mental health status, social support, and demographics have demonstrated a significant effect on death attitudes in several studies within an older adult population (Azaiza et al., 2010; Bowling et al., 2010; Cicirelli, 1999; Cicirelli, 2002; Fortner & Neimeyer, 1999; Lockhart et al., 2001; Moreno, Solana, Rico, & Fernandez, 2008; Stromberg & Jaarsma, 2008).

Physical and psychological health.

There is considerable empirical evidence substantiating that, having more self-rated physical impairments and psychological problems as an older adult, is associated with higher levels of death anxiety (Cicirelli, 2002; Fortner & Neimeyer, 1999; Lockhart et al., 2001; Moreno et al., 2001). In a meta-analysis of 49 relevant research studies, having greater self-

reported global measures of physical impairments ($r = 0.17$, $p < .05$) and psychological problems ($r = 0.28$, $p < .05$) were reliably associated with higher levels of death anxiety in adults over the age of 50 (Fortner & Neimeyer, 1999). Subjective assessments of poor physical health ($r = –.27$, $p < .05$) and worse mental health ($r = –.44$, $p < .05$) were significantly correlated with greater fear of death in 109 adults, 65 years and older (Lockhart et al., 2001), with more physical symptoms associated with higher levels of fear of death. Subjective mental health status also emerged as a significant predictor of fear of death ($t(101) = –3.60$, $p < .05$), with poorer perceived mental health status associated with greater fear of death. Additionally, individuals' self-evaluation of physical and mental health, pain, and experience with health problems accounted for a significant increase in variance in fear of death attitude ($\Delta R^2 = .19$). Moreno et al. (2001) found a significant correlation between more psychological problems ($r = .27$, $p < .05$) and lower self-reported health status ($r = .30$, $p < .05$), with greater death anxiety in 227 older adults. Furthermore, results from Cicirelli (2002) found that self-reported health status was both, negatively correlated to fear of the known ($r = –.12$, $p < .05$) and a significant predictor ($\beta = –.11$, $p = .05$), suggesting that elderly in poorer health had a greater fear of death. Perceived mental health status, specifically the presence of higher levels of anxiety and depression, have also been correlated with greater fear of death and death anxiety (Stromberg & Jaarsma, 2008). In 145 geriatric patients with heart failure, the self-reported presence of greater anxious and depressive symptomatology was found to be significantly correlated to greater fear of death ($r = .40$, $p < .001$). A substantial body of the literature echoes these results, finding significant correlations between self-rated health and death attitudes in older adults, with poorer health being associated with greater death anxiety.

Perceived social support.

Less fear of death in the geriatric population has oftentimes been attributed to stronger social support because it fosters a greater sense of collective stability and safety (Azaiza et al., 2010; Bowling et al., 2010; Cicirelli, 1999; Cicirelli, 2002). However, the correlation between social support and death anxiety is more equivocal in the elderly, particularly when taking into account living arrangement. In a study examining death anxiety in older adults over the age of 60 (n = 145), investigators found a significant correlation between death anxiety scores and perceived social support in nursing home residents (r = –.28, p < .05); higher social support was related to lower death anxiety for those residing in institutions (Azaiza et al., 2010). In community-dwelling elderly, no significant correlations were found between social support and death anxiety. In this same study, results also indicated that the institutionalized elderly (n = 65), sampled from five nursing homes, reported higher death anxiety compared to the sample of community-dwelling older adults (n = 80), $F(1, 141) = 15.59$, $p < .001$, $\eta^2 = .10$. Moreno et al. (2008) also found significant differences in death anxiety among those who lived in institutionalized residences (n = 105) versus those who were community-dwelling (n = 122). In contrast, the findings demonstrated that institutionalized elderly had significantly less death anxiety compared to those who were living in the community (r = –.38, p < .01).

Institutionalization of the elderly may serve as an opportunity to create more social support networks, potentially leading to less death anxiety. However, some studies have shown that perceived social support in institutionalized elderly may also be positively related to death anxiety, due to the reminder of impending death from the consistent exposure to the loss of others within the communal institution. Duff & Hong (1995), on the other hand, found that fear of death is not significantly associated with living with a higher concentration of older people

(i.e., retirement communities) based on 674 residents from six retirement communities. This was determined by comparing the significant ($p < .05$) group means on death anxiety scores between the three oldest-aged ($n = 229$) and the three youngest-aged ($n = 445$) retirement communities, based on the notion that residential proximity to older individuals may influence death attitudes.

PRESENT STUDY

The present study was a partial replication of a previous study conducted by Daaleman and Dobbs (2010), which aimed at examining spirituality and religiosity, and its correlation with fear of death and approach acceptance of death attitudes in a primarily Caucasian ($n = 176$; 68.4%) sample of chronically ill community-dwelling older adults from Kansas and North Carolina. The present study had five major aims: (1) partial replication of research results from Daaleman and Dobbs with an ethnically diverse sample, primarily Asian and Hawai‘ian or Pacific Islanders, of institutionalized and chronically ill older adults, (2) determination of potential differences in self-reported levels of death anxiety and predictor variables (depression, anxiety, self-rated global health status, functional status/ physical functioning, perceived social support, spirituality, and intrinsic religiosity) in an ethnically diverse and institutionalized sample, compared to the community-dwelling participant sample from the study conducted by Daaleman and Dobbs, (3) determination of whether self-constructs related to spirituality (self-efficacy and life scheme) from an ethnically diverse and institutionalized sample of chronically ill older adults were related to self-reported death attitudes (fear of death and approach acceptance), (4) determination of whether self-constructs of intrinsic/ subjective religiosity (strength of belief and closeness to God/ Higher Force) from an ethnically diverse and institutionalized sample of chronically ill older adults was related to self-reported death attitudes (fear of death and approach acceptance), and (5) investigation into the potential meaningful

relationships between death attitudes (fear of death and approach acceptance) with demographic variables (age, gender, ethnicity, marital status, categorical education level, religious and/ or spiritual affiliations, and living arrangement), self-rated health status (depression, anxiety, and functional status), and perceived social support.

In the previous study (Daaleman & Dobbs, 2010), investigators recruited 257 community-dwelling participants, identified through two health care practice panels from two geographic locations: North Carolina and Kansas. The North Carolina sample was identified through patient-completed health questionnaires from physicians' offices, while the Kansas sample was identified using health administrative datasets. In-home interviews were conducted to collect information about self-rated health and physical functioning, social (affective, dependent, and interactive) and psychological (depression and anxiety) functioning, demographic characteristics (gender, age, marital status, ethnicity, and education level), death attitudes (fear of death and approach acceptance), and constructs related to spirituality (self-efficacy and life scheme) and intrinsic religiosity (closeness to God and strength of belief). Participants who failed the cognitive screening [3 or more errors on the Six-Item Screener (Callahan et al., 2002) or scored less than 24 on the Mini-Mental State Exam (Folstein et al., 1975)] were excluded from the study. All study measures used in the Daaleman and Dobbs study were replicated for the present study, with the exception of the Demographic Questionnaire and Health Questionnaire. It is unknown what measure was used to obtain demographic information from the Daaleman and Dobbs study, or if any were used or rather, the information was obtained via self-report in an interview format upon enrollment or extracted from medical records. The major results found in the Daaleman and Dobbs study were that self-efficacy ($\beta = -.10$, $p < .001$), functional status ($\beta = .02$, $p < .05$), and anxiety ($\beta = .03$, $p < .01$) were significant predictors of

fear of death. Additionally, age (β = -.02, $p < .01$), closeness to God (β = -.60, $p < .001$), and strength of belief (β = -.39, $p < .001$) were found to be significant predictors of approach acceptance of death attitude.

A major limitation of the previous study was the sample's lack in representation of older adults from different ethnic and racial groups, thereby reducing the generalizability of its results. Participants' ethnicities were categorized into only three groups: *White* (n = 176, 68.4%), *African American* (n = 65, 25.5%), and *Other* (n = 7, 2.7%), with the vast majority of its study participants reported as *White*. As previously discussed, culture plays an integral role in shaping the factual and theoretical viewpoints of a death system (Morgan, 1995), and thereby, death attitudes can be vast and variable. The large majority of studies examining death anxiety in the current field have primarily focused on White/ Caucasian participants and have largely ignored ethnic minorities **(**Ardelt, 2003; Daaleman & Dobbs, 2010; Fry, 2003; McClain, Rosenfeld, & Breitbart, 2003; Rappaport et al., 1993; Wink & Scott, 2005). Race and ethnicity may potentially be a factor contributing to the conflicting research findings in the literature on death attitudes among older adults.

In the limited research studies that have specifically studied the effect of ethnicity on death anxiety, results indicated cultural differences in death attitudes. Cicirelli (1999) found that elderly African Americans reported less fear of dying and less fear of the unknown, compared to the sample of White/ Caucasian older adults. There are even fewer studies that have explored death attitudes in minority-majority geriatric samples. Some of these recent studies have demonstrated that ethnic minorities (i.e. origins from India, Pakistan, the Caribbean, China, or Japan) have more fear of death compared to non-minorities (Bowling et al., 2010; Matsui & Braun, 2009). In addition to an increased fear of death, Matsui and Braun (2009) found that

Japanese Americans scored significantly higher on the subscale of Fear of Death and significantly lower on the subscale of Approach Acceptance of death attitudes, as measured by the Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser, 1994), than the majority White/ Caucasian sample of older Americans in which the DAP-R scores were normed. Results from Daaleman and Dobbs (2010) found that race was not a significant variable contributing to fear of death and approach acceptance, but these findings may be a result of the limited variation in race and ethnicity among its study participants. These reasons make it essential for further investigation of death attitudes within diverse populations, particularly when the demographic makeup of the U.S. is trending towards heterogeneity (US Census, 2010).

In the U.S., all major race groups increased in population size in the last decade, with minorities, referred by the U.S. Census (2010) as people who reported their ethnicity and race as something other than non-Hispanic White, growing from 86.9 million in 2000 to 111.9 million in 2010, a 28.8% increase. The Asian population, in particular, experienced the fastest rate of growth compared to any other race group, with a 43.3% increase from a decade ago (an approximate growth of 4.4 million). Hawai‘i is the U.S. state with the highest percentage of minorities in its population at 77.3% (approximately 1.1 million), of which 38.6% identified as Asian and 23.6% as two or more races. Furthermore, in 2010, 14.3% (approximately 195,000) of the population in Hawai‘i was 65 years and older, and the City and County of Honolulu, specifically, had the highest percentage of its population 85 years and older (3.5%, approximately 11,800) compared to any other region in the U.S. (U.S. Census, 2010). Therefore, the island of O‘ahu was an ideal location to obtain data for this study, as it was well suited to represent the growing minority (particularly Asian) and geriatric population in the U.S.

Another limitation to the previous study conducted by Daaleman and Dobbs (2010) was that religious and spiritual affiliations were not identified and accounted for. According to the 2010 State of Hawai‘i Data Book, the majority of those who have identified as Asian in Hawai‘i reported their origins from the Philippines, Japan, China, Korea, or Vietnam. With the exception of the Philippines, all other reported Asian countries indicated Buddhism as the major religious denomination in their respective country (U.S. Department of State, 2004). The current research fields studying religiosity and spirituality, as well as the literature looking at its relationship to death attitudes, have been dominated by participant samples with reported Christian affiliations (i.e., Protestant, Catholic, and/ or Christian) (Ardelt, 2003; Downey, 1984; Fry, 2003; McClain et al., 2003; Rappaport et al., 1993; Wink & Scott, 2005). There has been scant research within the literature studying the correlations between spirituality, religiosity, and death attitudes among individuals of non-Christian denominations, and even less differentiating denominations within religions (e.g., Catholic vs. Protestant vs. Christian, etc.). Results from previous studies have indicated differences in death attitudes based on religious beliefs and attitudes and as such, more research is needed to determine the effects of these constructs on death attitudes in those with diverse philosophies, backgrounds, and beliefs. By addressing and focusing on the issue of inadequate representation of minority groups, results from the present study further improved upon our understanding of what specific factors influence death attitudes in chronically ill older adults. This also introduced a new perspective on the effects of spirituality and intrinsic religiosity on death anxiety, and likely, increases the generalizability of results from current studies in the field.

Taking into account the previous limitations, the present study explored whether there were differences in fear of death and approach acceptance of death attitudes in institutionalized

older adults with progressive and long-term illnesses within a more diverse sample of participants, specifically focusing on Asian and Hawai‘ian or Pacific Islanders. In particular, the present study examined the effect of the demographic characteristic of religious/ spiritual affiliation, a variable not accounted for in the Daaleman and Dobbs (2010) study. Furthermore, the present study's sample solely focused on institutionalized elderly, while Daaleman and Dobbs only recruited community-dwelling older adults. Participants in their study also had a lower age criterion at 50 years old, while the present study included participants 65 years or older. All other obtained variables (i.e., health and functional status, psychosocial variables, spirituality, intrinsic religiosity, and death attitudes) were completely replicated in the present study.

Methods

Data.

The present study used archival data from a previous University of Hawai‘i at Mānoa IRB-approved research study conducted by the author from 2012-2013. The archived data includes the following measures from 69 institutionalized elders in Hawai‘i: Demographic Questionnaire, Health Questionnaire (CDC, 2003), Six-Item Screener derived from the Mini-Mental State Exam (MMSE) (Callahan, Unverzagt, Hui, Perkins, & Hendrie, 2002), Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser, 1994), Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36; Stewart, Hays, & Ware, 1988), Years of Healthy Life Scale (YOHL; Erikson, Wilson, & Shannon, 1995), Geriatric Depression Scale (GDS; Montorio and Izal, 1996), Zung Self-Rating Anxiety Scale (SAS; Zung, 1971), Duke-UNC Functional Social Support Questionnaire (Broadhead, Gehlbach, DeGruy, & Kaplan, 1988), Older American Resources and Services Assessment (OARS; Fillenbaum and Smyder, 1981), Spirituality Index of Well-Being

(SIWB; Frey, Daaleman, & Peyton, 2005), and a measure of intrinsic religiosity used in the Daaleman and Dobbs (2010) study. Additional information and psychometric properties of each measure is discussed in further detail in the **Psychometric Properties of Measures** section.

Participants.

The archived data set includes a total of 69 participants that were recruited from June 2012 to April 2013 at six participating nursing homes (NH) and one assisted care facility (AC) on the island of Oʻahu in the State of Hawaiʻi. Participants were recruited from the following facilities: Palolo Chinese Home (NH) (*n* = 27), Pearl City Nursing Home (NH) (*n* = 12), Wahiawa Nursing and Rehabilitation Center (NH) (*n*=12), Hale Nani Rehabilitation and Nursing Center (NH) (*n* = 10), Liliha Healthcare Center (NH) (*n*=5), Oʻahu Care Facility (NH) (*n* = 1), and One Kalakaua Senior Living (AC) (*n* = 2). Participants ranged in age from 65 to 97 (*M* = 79.65, *SD* = 8.79), 59.4% were female (*n* = 41), and the primary ethnicities reported were as follows: *Japanese* (*n* = 26; 37.7%), *Hawaiʻian or Pacific Islander* (*n* = 10; 14.5%), *Chinese* (*n* = 10; 14.5%), *Filipino* (*n* = 9; 13.0%), *Caucasian* (*n* = 7; 10.1%), or *Other* (*n* = 7; 10.1%). Participants who reported him/herself as *African American* (*n* = 2) or *Hispanic* (*n* = 5) comprised the *Other* category.

The total sample of participants reported the following range of education levels: *less than high school* (*n* = 9; 13.0%), *high school degree or GED* (*n* = 31; 44.9%), or *some college or higher* (*n* = 29; 42.0%). The last category was comprised of participants who reported *some college* (*n* = 11), *2-year college/ Associate's degree* (*n* = 5), *4-year college/ Bachelor's degree* (*n* = 7), or *postgraduate degree* (*n* = 6). About half of the participants reported marital status as *widowed* (*n* = 35; 50.7%%), followed by, *married* (*n* = 19; 27.5%), and then, *single, separated, or divorced* (*n* = 15; 21.7%). Additionally, participants reported the following variety of

religious/ spiritual affiliations: *Catholic* (*n* = 23; 33.3%), *Protestant or Other Christian* (*n* = 17; 24.6%), *Buddhist* (*n* = 15, 21.7%), or *Other* (*n* = 14; 20.3%). The *Other* category was comprised of participants who reported him/herself as, *Spiritualist* (*n* = 3), *Agnostic* (*n* = 2), *Muslim* (*n* = 1), *Atheist* (*n* = 1), or *Other* (Unreported/ unspecified religious or spiritual affiliation) (*n* = 7). Table 1 presents the demographics of the archived data set as well as the counterpart data set reported in Daaleman and Dobbs (2010).

Identification and recruitment of participants.

Participants from the archived data set were recruited from six nursing homes (NH) and one assisted care facility (AC) located on the island of O‘ahu in the State of Hawai‘i. Each facility where participants were recruited was initially identified from the *Senior Information & Assistance Handbook, 2009-2011* (Elderly Affairs Division, 2009). Participating locations were determined based on approval from each facility’s administrator and staff. Approval from the University of Hawai‘i at Mānoa Human Studies Program/ Institutional Review Board (IRB) was obtained during the data collection phase of the author’s previous research study (2012-2013).

Participants eligible to participate in the study were based on several criteria. Two inclusion criteria were: (1) 65-years and older and (2) self-reported diagnosis of at least one chronic disease (e.g., heart disease, cancer, diabetes mellitus, chronic liver or respiratory disease, cardiovascular disease, etc.). Three exclusion criteria were: (1) non-English speaking, (2) cognitive impairment (measured by a Six-Item Screener derived from the Mini-Mental State Exam (MMSE)) (Callahan, Unverzagt, Hui, Perkins, & Hendrie, 2002), or (3) refusal to participate in the study.

Based on the regulations set by each participating location, potential participants were either approached at random or from a list of pre-approved residents formed by the facility’s

administration. Participants were approached in his or her respective location and were given information about the study. Those who voluntarily agreed to participate in the study were asked to respond to a self-report Health Questionnaire presented in an interview format [Appendix B] to determine the presence and diagnosis of at least one chronic disease. Contingent upon both inclusion criteria (i.e., age and chronic disease) being met, an assessment of capacity was conducted on each potential enrollee by administering a six-item screening measure derived from the Mini-Mental State Exam (MMSE); those with at least three or more errors were excluded from the study sample (Callahan et al., 2002).

Consent.

Following the verification of all eligibility criteria, participants were asked to provide verbal informed consent. Consent was obtained in the location in which the participant was identified, and every attempt at maintaining privacy was made. The IRB-approved consent forms were given to each participant for his or her records in accordance with the University of Hawai‘i at Mānoa IRB regulations. In order to ensure that informed consent was freely given and that the rights and welfare of all the participants were protected, participants were asked to describe, in his or her own words, what the participant was consenting to do. In order to minimize the possibility of coercion or undue influence while obtaining consent, it was clearly explained that participation was entirely voluntary and that he or she could refuse to participate or withdraw from the study at any time after giving consent. Furthermore, participants were given the opportunity to ask questions and to take as much time as needed to decide. If they had no questions, it was presumed that they understood the information that was provided verbally and in the consent document. This ensured that the information being communicated to the participant during the consent process did not waive or appear to waive any of his or her legal

rights. The consent process and interview were conducted by either the primary investigator (PI) or a trained undergraduate research assistant who received appropriate training and education to perform all activities. An undergraduate Psychology student at the University of Hawai‘i at Mānoa, who earned course credit, was hired as the trained research assistant to aid in these duties, and was formally educated and trained by the PI in all research procedures.

Procedure: Data collection.

At enrollment, information on demographics, clinical conditions, cognitive function, health and functional status, and social and psychological data was collected from interviews with participants. When the interview formatted measures involved responses to Likert items, a printed version in large font was provided to the participant. The completion of an entire interview for each enrolled participant was approximately one hour. Participants were given the option to complete the interview in multiple sessions.

Measurements/ Instruments for Study Constructs

Specific measures and instruments that were administered during the interview were as follows (All measures and instruments were self-report presented in an interview format in the order listed below.):

Construct	Measurement/ Instrument
Participant demographics	Demographic Questionnaire • Age; gender; ethnicity; marital status; categorical education level; religious and/ or spiritual affiliations
Environment and context	Living arrangement (NH or AC)
Presence of chronic illnesses	Health Questionnaire (CDC, 2003)
Cognitive impairment	Six-item Screener (derived from the MMSE; Callahan, Unverzagt, Hui, Perkins, & Hendrie, 2002)
Death attitudes	Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser, 1994)

	• Fear of death subscale Approach acceptance subscale
Functional status/ Physical functioning	The Medical Outcomes Study (MOS) 36-Item Short Form Health Survey (SF-36; Stewart, Hays, & Ware, 1988) • Physical functioning index (PFI)
Global health status	Years of Healthy Life Scale (YOHL; Erikson, Wilson, & Shannon, 1995)
Mental health status • Depression (during last month) • Anxiety (during last week)	 Geriatric Depression Scale (GDS; Montorio & Izal, 1996) Zung Self-Rating Anxiety Scale (SAS; Zung, 1971)
Social support	Older American Resources and Services Assessment (OARS; Fillenbaum & Smyder, 1981) • Social interaction measure • Social dependence measure Duke-UNC Functional Social Support Questionnaire (Broadhead, Gehlbach, DeGruy, & Kaplan, 1988) • Affective social support
Spirituality	Spirituality Index of Well-Being (SIWB; Frey, Daaleman, & Peyton, 2005) • Life scheme subscale • Functional self-efficacy subscale
Intrinsic Religiosity	Two self-report items as measures for: • Strength of religious and/ or spiritual orientation • Closeness to God or a Higher Force

The rights and welfare of all participants were protected by ensuring confidentiality of all collected data. Only essential identifiable information (i.e., first name, last name, and location) was collected in order to keep track of participant enrollment during the data collection phase of the study. This information was compiled, as a list on a password-protected Microsoft Excel file on the PI's password-protected computer, which was only be accessible to herself and the trained research assistant. All study materials and self-report measures were collected on paper and were

de-identified; random assignment of numerical identifiers for each enrolled participant was used. In order to discriminate between participants' collected data, the de-identified numerical identifier was noted on all relevant research material. No files linking the numerical identifier with the research participant existed. All hard copy study materials were double-entered into a Statistical Package for the Social Sciences (SPSS 20.0, 2011) database, once by the PI and once by the trained research assistant, and cross-checked in order to ensure accuracy and reliability of data entry. All electronic data were stored as password-protected files, and hard copy data were stored in locked cabinets in a locked office. The University of Hawai'i at Mānoa was the coordinating site for the study, supplying office space for the PI.

Psychometric Properties of Measurements/ Instruments for Study Constructs

Self-Report Measures (Interview format)		
Measurement/ Instrument	**Construct**	**Psychometric Information Available**
Demographic Questionnaire	Participant demographics Environment and context	N/A (Created by author for this study) Age; gender; ethnicity; marital status; categorical education level; religious and/ or spiritual affiliations Living arrangement (NH or AC)
Health Questionnaire (CDC, 2003)	Presence of chronic illnesses	N/A (Checklist of chronic illnesses)
Six-item Screener (derived from the MMSE) (Callahan et al., 2002)	Cognitive impairment	6 items; Cut-off score=2 • Hit rate for dementia = 96.8 • Hit rate for cognitive impairment = 74.2

Death Attitude Profile-Revised (DAP-R; Wong et al., 1994)	Death attitudes	7-point Likert scale (*Strongly disagree – Strongly agree*)
		• Fear of death subscale
		  • 7 items
		  • Cronbach's α

		coefficient = .86 • 4-week test-retest = .71 • Convergent, Discriminant, Construct validity support • Approach acceptance subscale • 10 items • Cronbach's α coefficient = .97 • 4-week test-retest = .95 • Convergent, Discriminant, Construct validity support
The Medical Outcomes Study (MOS) 36-Item Short Form Health Survey (SF-36; Stewart et al., 1988)	Functional status/ Physical functioning	Physical functioning index (PFI) • 10 items; 3-point Likert scale (*Yes, limited a lot – Not limited at all*) • Cronbach's α coefficient = .90 • Criterion validity support
Years of Healthy Life Scale (YOHL; Erikson et al., 1995)	Global health status; Health-related quality of life	1 item; 5-point Likert scale (*Excellent – Poor*) • ~83% (*N*=202 million) with excellent – good health, had no activities of daily living (ADL) limitations • Tests of stability reliability not available
Geriatric Depression Scale (GDS; Montorio & Izal, 1996)	Depression (during last month)	15 items; dichotomous (*yes*, *no*) • Cronbach's α coefficient= .99 • Test-retest = .94 • Criterion validity support
Zung Self-Rating Anxiety Scale (SAS; Zung, 1971)	Anxiety (during last week)	20 items; 4-point Likert scale (*None or A little of the time – Most or all of the time*) • Split-half correlations = .71 • Analysis of variance between five diagnostic groups & control group

		• Significant correlations between SAS, TMAS, ASI • Criterion validity support
Duke-UNC Functional Social Support Questionnaire (Broadhead et al., 1988)	Affective Social support	Affective social support • 3 items; 6-point Likert scale (*Much less than I would like – As much as I would like*) • Test-retest = .75 - .77 • Construct, Convergent, Discriminant validity support

Older American Resources and Services Assessment (OARS; Fillenbaum & Smyder, 1981)	Social Interaction & Dependence	• Social interaction measure
		  • 3 items; *None/ Not at all – 5 or more/ Once a day or more*
		• Social dependence measure
		  • 2 items; Dichotomous (*yes, no*)
		• Inter-rater reliability = .82
		• Tests of validity not available

Spirituality Index of Well-Being (SIWB; Frey et al., 2005)	Spirituality	• Life scheme subscale
		• Functional self-efficacy subscale
		  • 6 items each; 5-point Likert scale (*Strongly agree – Strongly disagree*)
		  • 2-week test retest = .79 & .86
		  • Cronbach's α coefficient= .87 (.80 & .83)
		  • Convergent, Discriminant, Construct validity support

Self-report items of intrinsic religiosity	Intrinsic Religiosity	• Strength of religious and/ or spiritual orientation • Closeness to God or a Higher Force • 1 item each; 4-point Likert scale (*Strong –*

		Not at all; *Extremely close – I don't believe*) • Tests of stability, reliability, validity, or internal consistency not available

Demographic Questionnaire. [Appendix A].

The Demographic Questionnaire consists of seven items and was developed by the author in order to obtain participant information regarding demographics and environment/ context. Participant demographics included self-reported age, gender, ethnicity, marital status, categorical educational level, religious/ spiritual affiliations, and current living situation.

Health Questionnaire. [Appendix B].

The Health Questionnaire obtained participant information regarding current presence and/ or diagnosis of a chronic illness. The included list of chronic diseases was based on the available guidelines from the Centers for Disease Control and Prevention [CDC], 2003. Psychometric properties for the Health Questionnaire were not available.

Six-Item Screener (Callahan, Unverzagt, Hui, Perkins, & Hendrie, 2002).

[Appendix C].

The Six-Item Screener is a brief six-item screening tool that reliably measures cognitive impairment among older adults, specifically developed to accurately screen cognitive ability in research participants. Each of the six items was derived from the Mini-mental state examination (MMSE) (Folstein, Folstein, & McHugh, 1975). The full-length MMSE has a 24-hour test-retest reliability of .89. No other tests of reliability were reported for the Six-Item Screener. The screener is comprised of three items designed to test short-term recall, a content valid assessment of a respondent's ability to learn new material, and three items that are designed to test temporal

orientation (i.e., year, month, and day of the week). Responses were reverse-scored as either *one* (‘correct’) or *zero* (‘incorrect’), and the total test was scored by a summation of errors. Scores range from zero to six errors, with higher scores indicating more errors and more highly correlated with cognitive impairment and dementia. In a sample of 344 community-based older adults (M_{age}=74.4 years, age range: 65–99 years) and 651 clinic-based patients (M_{age}=69.6 years, age range: 21–92 years), sensitivity of the Six-Item Screener was determined by comparing the number of errors in this measure with the sensitivity of scores from the full MMSE, by using cognitive impairment as the gold standard as well as a dementia diagnosis as the gold standard. Using a cut-off of two errors, the sensitivity or hit rate of the Six-Item Screener for the presence of cognitive impairment in the two samples was 74.2 and for a diagnosis of dementia in the two samples was 96.8, indicating that there were false positive rates of 25.8 and 3.2 for a diagnosis of cognitive impairment and dementia, respectively. In the same samples of community-based and clinic-based participants, the corresponding sensitivity for the full MMSE using a cut-off score of 25 (on a scale from 0 to 30) was 71.5 and 82.7, respectively, for cognitive impairment, and 98.4 and 89.3, respectively, for a dementia diagnosis. These scores indicate that the Six-Item Screener is comparable to the diagnostic properties of the full MMSE, and yields acceptable reliability and validity estimates for detecting cognitive impairment and dementia.

Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser, 1994). [Appendix D].

The DAP-R is a self-report measure used to assess the multidimensional nature of death attitudes in older adults. The DAP-R is comprised of 32-items within five different subscales measuring specific death attitudes: Fear of Death (7-items), Approach Acceptance (10-items), Neutral Acceptance (5-items), Death Avoidance (5-items), and Escape Acceptance (5-items).

Two of the five subscales, Fear of Death and Approach Acceptance, were administered for the author's archived data set because of the constructs' theoretical and empirical evidence in the literature, the subscales' sound psychometric properties, and the significant correlations these constructs have demonstrated with physical, psychological, psychosocial, and demographic variables in previous empirical studies (Daaleman & Dobbs, 2010; Matsui & Braun, 2009; Wong et al., 1994).

Each item is scored on a 7-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). The mean subscale score is calculated by dividing the total subscale score by the number of items within that same subscale. Scores on the Fear of Death subscale range from 1–7, with higher scores indicating a greater specific, conscious, and existential fear of loss associated with death. Scores on the Approach Acceptance subscale range from 1–7, with higher scores reflecting a more positive affective reaction to the confrontation of facing one's own death by having a stronger belief in a happy afterlife.

These two subscales have demonstrated strong internal consistency, as evidenced by a Cronbach's α coefficient of .86 for the Fear of Death subscale and a Cronbach's α coefficient of .97 for the Approach Acceptance subscale (Wong et al., 1994). Test-retest reliability was determined by comparing scores of two time points, four weeks apart, drawn from a random sample of 30 participants within the age group of 100 participants between the ages of 60 and 90 years. The four-week test-retest coefficients for the subscales of Fear of Death and Approach Acceptance were .71 and .95, respectively. Factor analysis was conducted to determine construct validity for the five subscales of the DAP-R. The results of the factor analysis produced five factors, consistent with its theoretical formulation of death anxiety, with a factor loading of .40 or greater on at least one component for all 36 items. Results from the factor analysis established

acceptable internal validity estimates for the seven items measuring Fear of Death and the ten items measuring Approach Acceptance, accounting for 13.4% and 33.3% of the variance, respectively. Convergent and discriminant validity were also determined for Fear of Death and Approach Acceptance through correlations with two measures, Templer's (1970) Death Anxiety Scale (DAS) and Hooper and Spilka's (1970) Death Perspective Scale. Fear of Death was positively related to the DAS ($r = .61$, $p < .001$) and negatively related to the Death as an Afterlife of Reward subscale of the Death Perspective Scale ($r = –.33$, $p < .001$). Approach Acceptance, on the other hand, was found to be negatively related to the DAS ($r = –.27$, $p < .01$) and positively related to the Death as an Afterlife of Reward subscale of the Death Perspective Scale ($r = .82$, $p < .001$). These results indicate that the specific DAP-R constructs are relatively independent of one another, and also demonstrate acceptable construct validity support for both subscales of Fear of Death and Approach Acceptance within the DAP-R measure.

Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36; Stewart, Hays, & Ware, 1988). [Appendix E].

The SF-36 is a self-report measure used to assess eight specific health concepts: physical functioning, role limitations due to physical problems, social functioning, bodily pain, general mental health, role limitations due to emotional problems, vitality, and general health perceptions. In the archived data set, the Physical Functioning index of the SF-36 was administered to measure the extent to which health status limits physical functioning in daily life. This subscale is comprised of ten items; each item is scored on a 3-point Likert scale, ranging from *Yes, Limited a lot* (1) to *Not limited at all* (3). The total index is scored and normed by a summation of the item responses divided by the maximum value of the scale (90), then

multiplied by 100. Scores range from 33.3–100, with lower scores indicating more severe impairment in physical functioning.

The 10-item Physical Functioning index of the SF-36 measure has demonstrated strong internal consistency with a Cronbach's α coefficient of .90 (Stewart et al., 1988). The SF-36 measure was constructed as a more comprehensive version of its predecessor, the SF-20 measure (Stewart, Hays, & Ware, 1988; Ware & Sherbourne, 1992). Correlations between the 6-item Physical Functioning index of the SF-20 was compared to the Health Perceptions Questionnaire (HPQ; Davies & Ware, 1981) (r = .86, p < .01), suggesting the subscale has criterion validity support.

Years of Healthy Life Scale (YOHL; Erikson, Wilson, & Shannon, 1995). [Appendix F].

The Years of Healthy Life Scale is a self-report measure of health-related quality of life. The single-item Scale is designed to measure an individual's perceived global health status. The item was reverse-scored on a 5-point Likert scale, ranging from *Excellent* (1) to *Poor* (5). A higher score indicates a stronger sense of global well-being. The estimated number and percentage of individuals who reported his or her global health status as measured by the single item on the YOHL were determined by self-rated functional status. Approximately 83% of respondents (N = 202 million) who perceived his or her general health as excellent, very good, or good had no limitations in activities of daily living (ADL). This suggests that greater global health status and a lower reported score on this single item of the YOHL may be related to fewer limitations in ADL. No tests of stability reliability for the YOHL were reported.

Geriatric Depression Scale (GDS) (Montorio & Izal, 1996). [Appendix G].

The GDS short form is a 15-item self-report measure for the assessment of depression in the elderly. Responses are dichotomously scored, *yes* (1) or *no* (0*),* either endorsing or negating depressive symptoms experienced in the past month, with scores ranging from 0–15. The total test is scored by a summation of item responses, with higher scores indicating more self-reported depressive symptoms during the past month. Numerous studies have been conducted to test the psychometric properties of the GDS. In a geriatric population (N = 116; M_{age} = 75.7 years), a sensitivity rate of 85% and a specificity rate of 74% were calculated using a cutoff score of 5 (Herrmann et al., 1996). Concurrent validity of the GDS long form was established by comparing three measures of depression: the GDS (r = .82, p < .001), the Hamilton Depression Rating Scale (HAMD; Hamilton, 1967) (r = .83, p < .001), and the Zung Self-Rating Scale for Depression (SDS; Zung, 1965) (r = .69, p < .001) (Montorio & Izal, 1996). Reliability of the GDS short form within institutionalized elderly yielded a Cronbach's α coefficient of .99 and a test-retest reliability of .94 (Lesher, 1986). The GDS short form has been significantly correlated to the 30-item GDS long form (r = .84, p < .001). These results have shown that the GDS short form is an acceptable substitute for the GDS long form in measuring depressive symptoms in older adults.

Zung Self-Rating Anxiety Scale (SAS; Zung, 1971). [Appendix H].

The SAS is a self-report measure of symptoms of anxiety during the past week. The 20-item instrument is scored on a 4-point Likert scale ranging from *None or A little of the time* (1) to *Most or all of the time* (4). Items 5, 9, 13, and 19 were reverse-scored. Scores range from 20–80, with higher scores indicating more pervasive symptoms of anxiety within the past week. The total measure is scored by a summation of item responses. Analysis of variance of the SAS

indicated significantly different mean scores between five diagnostic groups and one control group tested: Anxiety Disorder (n = 22, M = 58.7, SD = 13.5), Schizophrenia (n = 25, M = 46.4, SD = 12.9), Depressive Disorder (n = 96, M =50.7, SD = 13.4), Personality Disorder (n = 54, M = 51.2, SD = 13.2), Transient Situational Disturbances (n = 12, M = 45.8, SD = 11.9), and Controls (n = 100, M = 33.8, SD = 5.9). Those in the Anxiety Disorder group scored significantly ($p < .05$) higher on the SAS compared to scores from the five other categorized groups. The SAS also has yielded criterion validity support by correlations between the SAS, the Taylor Manifest Anxiety Scale (TMAS; Taylor, 1953), and Anxiety Status Inventory (ASI; Zung, 1971). Pearson correlation coefficients were found to be significant ($p < .01$) between the ASI and SAS (r = .66) and between the SAS and TMAS (r = .30). Split-half reliability was also conducted for the SAS, separating even from odd items within the measure, which yielded a result of .71. Statistical results of the SAS indicate validity support as a measure of anxiety.

Duke-UNC Functional Social Support Questionnaire (Broadhead, Gehlbach, DeGruy, & Kaplan, 1988). [Appendix I].

The Duke-UNC Functional Social Support Questionnaire is a 14-item self-report measure of perceived social support, and its 3-item subscale of Affective Social Support was included in the archived data set. Responses were reverse scored on a 5-point Likert scale ranging from *As much as I would like* (1) to *Much less than I would like* (5). Scores range from 3–15, with higher scores indicating a higher degree of perceived affective social support from others. The Affective Social Support subscale is scored by a summation of item responses.

The three items in the Affective Social Support subscale have demonstrated statistically significant ($p < .0001$) test-retest reliability. A random sample of 22 participants was drawn from the 401 participants and the test-retest interval range was six to 30 days, with an average of 13.1

days (Broadhead et al., 1988). The test-retest correlation coefficients for the three items ranged from .75 to .77. Confirmatory factor analysis defined by an a priori model based on item-remainder calculations was also conducted to determine internal consistency for the three items within this subscale. The item-remainder correlation coefficients were .52, .68, and .72 for the items measuring affective social support.

Construct validity for the individual items was also analyzed by correlating these items with four dimensions of adult health (symptom status, social function, physical function, and emotional function) as measured by a 63-item questionnaire, the Duke-UNC Health Profile (DUHP; Parkerson, Gehlbach, Wagner, James, Clapp, & Muhlbaier, 1981). The majority of the tested items were significantly correlated to the four DUHP dimensions with Pearson's correlation coefficients ranging from ($r = .11$, $p < .04$) to ($r = .35$, $p < .0001$). Furthermore, the Affective Social Support subscale has demonstrated acceptable concurrent validity and discriminant validity support. Concurrent and discriminant validity were determined by correlating the items that measure affective social support from the Duke-UNC Functional Social Support Questionnaire with four different constructs of social activity (social contacts, group participation, social function, and socializing with others) that were measured by specific subscales from the DUHP instrument and the Rand Health Insurance Experiment Social Activities Questionnaire (Ware, Brook, Williams, Stewart, & Davies-Avery, 1980). Self-reported affective social support was correlated to measures of social contact ($r = .17$, $p < .001$), social function ($r = .15$, $p < .0004$), socializing with others ($r = .22$, $p < .0001$), and group participation ($r = .08$, $p < .11$). The low correlation between group participation and affective social support suggests acceptable discriminant validity, while the three other measured correlations suggest adequate convergent validity.

Older American Resources and Services Assessment (OARS; Fillenbaum & Smyder, 1981). [Appendix J].

The OARS is a self-report measure used to assess social, economic, mental health, physical health, and self-care capacity in geriatric individuals. The archived data set includes two domains of social support, social interaction with others and social dependence on others. Both measures are within the Social Resources section of the OARS. The Social Interaction measure contains three items measuring how often the respondent reports interacting with others, with scores on a scale of *None/ Not at all* (0) to *Five or more/ Once a day or more* (3). An additional item was added to the OARS, to measure the number of times a respondent talked to others via electronic means (e.g., text, e-mail, Skype, Facebook, etc.), however this item was omitted in the analyses because of the lack of endorsed responses. The Social Dependence measure consists of two items with a dichotomous response format, *yes* (1) or *no* (0), measuring whether or not respondents are able to depend on others for social support. Scores range from 0–9 and 0–2 for the measures of Social Interaction and Social Dependence, respectively. Each measure is scored by a summation of the item responses, with higher scores indicating greater perceived social support, in either the individual domains of interaction or dependence.

Scores from 30 OARS assessments were compared to ratings from 11 users (six clinicians and five researchers from nine states) in order to calculate inter-rater reliability. From an analysis of variance, items from the Social Resources section of the OARS yielded a statistically significant ($p < .001$) correlation coefficient of .823, suggesting agreement among raters. Social workers, professionals who typically assess an individual's social resources, reported using the same items from the OARS to assess the measured constructs. Therefore, tests

of validity for the Social Resources section of the OARS were not conducted due to the lack of comparable comparisons.

Spirituality Index of Well-Being (SIWB; Frey, Daaleman, & Peyton, 2005). [Appendix K].

The SIWB is an instrument with reliability and validity support. It is designed to assess two specific domains of spirituality (life scheme and self-efficacy) and its' effects on an individual's subjective well-being. The SIWB is a 12-item self-report instrument: six items measure the self-construct of life scheme, assessing the degree to which an individual has a sense of coherence in the meaning of one's own life, and six items measure the self-construct of self-efficacy, assessing the degree to which an individual has the capacity to overcome challenges. Each item is scored on a 5-point Likert scale, ranging from *Strongly Agree* (1) to *Strongly Disagree* (5), and the measure is reverse-scored by a summation of the item responses. Scores on the full SIWB instrument range from 12–60, with each subscale's score ranging from 6–30, with higher scores indicating a greater subjective degree of spirituality or its constructs. The mean score for each subscale is calculated by dividing the total subscale score by the number of items within that same subscale.

Results from three studies, with a total combined sample size of 1363 participants, have demonstrated that the SIWB has sound psychometric properties (Frey et al., 2005). The three studies have included samples of 227 community-dwelling elderly (Daaleman, Frey, Wallace, & Studenski, 2002), 509 adult outpatients (Daaleman & Frey, 2004), and 577 Catholic high school student (Frey, Pedrotti, Edwards, & McDermott, 2004). Two-week test-retest reliability was determined for the study with adult outpatients (n = 509) and the correlation coefficients for the

full SIWB measure was .79, and the Life Scheme and Self-Efficacy subscales each yielded a .86 (Daaleman & Frey, 2004).

In the study of 227 geriatric outpatients (M_{age} = 74.0 years, age range: 65–90 years), acceptable internal consistency was demonstrated with a Cronbach's α coefficient of .87 for the full SIWB scale, .83 for the Self-Efficacy subscale, and .80 for the Life Scheme subscale (Daaleman et al., 2002). Convergent and discriminant validity were determined for the full SIWB scale and its two subscales through correlations with general and specific measures of well-being. In the geriatric outpatient study, convergent validity was established with significant inverse correlations between the total SIWB scale, the Self-Efficacy subscale, and the Life Scheme subscale with other measures of subjective mental health status: depression from scores on the GDS (Yesavage, Brink, & Rose, Lum, Huang, Adey, & Leirer, 1982) (r = –.35, p < .01 and r = –.31, p < .01 and r = –.31, p < .01, respectively) and fear of death from scores on the DAP-R (Wong et al., 1994) (r = –.39, p < .01 and r = –.33, p < .01 and r = –.38, p < .01, respectively), and self-rated health status from scores on the YOHL (Erikson et al., 1995) (r = –.35, p < .01 and r = –.27, p < .01 and r = –.36, p < .01, respectively). Convergent validity was also established with significant positive correlations between the total SIWB scale, the Self-Efficacy subscale, and the Life Scheme subscale with other self-reported measures of health and functional status: physical functioning from scores on the SF-36 (r = .28, p < .01 and r = .28, p < .01 and r = .23, p < .01, respectively) and quality of life from scores on the European Quality of Life Scale (The EuroQol Group, 1990) (r = .18, p < .01 and r = .19, p < .01 and r = .14, p < .05, respectively). Discriminant validity was tested by correlating the total SIWB scores and it's subscales' scores with the Religious Belief Scale (Allport, Gillespie, & Young, 1953), a measure of extrinsic and intrinsic religiosity, which yielded correlation coefficients that were either not

significant or small (SIWB full scale (r = .12, p > .05), Self-Efficacy subscale (r = .03, p > .05), and Life Scheme subscale (r = .18, p < .01). These results may indicate the discrete characteristics between spirituality as measured by the SIWB and religiosity.

Additionally, further tests of validity in the adult outpatient study (n = 509) found the largest significant correlations between the total SIWB scale, the Self-Efficacy subscale, and the Life Scheme subscale with other self-reported broad measures of well-being: existential well-being from scores on the Spiritual Well-Being Scale (SWB; Daaleman & Frey, 2004) (r = .75, p < .001 and r = .61, p < .001 and r = .75, p < .001, respectively), general well-being from scores on the General Well-Being Scale (Ellison, 1983) (r = .64, p < .001 and r = .61, p < .001 and r = .57, p < .001, respectively), and spiritual well-being from scores on the SWB (r = .62, p < .001 and r = .49, p < .001 and r = .63, p < .001, respectively). Further analyses were conducted to test construct validity in the geriatric outpatient study by comparing the correlations between the full SIWB measure and the Religious Belief Scale with self-reported measures of depression and fear of death. The full SIWB measure was a stronger significant (p < .05) estimate of variance with depression (r^2 = .13) and fear of death (r^2 = .15), compared to the Religious Belief Scale (r^2 = .02 and r^2 = .04, respectively). Self-reported spirituality accounted for approximately 5.76 times more variance with depression and 3.80 times more variance with fear of death than did the self-construct of religiosity.

Results from exploratory and confirmatory factor analyses from three study samples (N = 1363), have established good fit with how spirituality is defined with the two independent constructs of self-efficacy and life scheme (Frey et al., 2005). Furthermore, factor analyses of the SIWB and its subscales are consistent for all the three study samples, providing good evidence

for the bi-dimensional structure of the SIWB and suggesting that the constructs of self-efficacy and life scheme are reasonable measures of spirituality.

Intrinsic Religiosity. [Appendix L].

Archived data from the author's previous study include two items that were administered to measure self-reported intrinsic religiosity, that were examined for the present study. Both items are subjective variables that are designed to measure the theoretical construct of intrinsic religiosity, greater strength of belief and greater subjective feeling of closeness to God or a Higher Force, two dimensions that have been shown in the literature to have significant correlations with lower death anxiety (Downey, 1984; Hoge, 1972). One item measures the individual's subjective strength of religious and/ or spiritual orientation, and the other item measures the individual's subjective closeness to God or a Higher Force. Both items were reverse-scored on a 4-point Likert scale: ranging from *Strong* (1) to *Not at all* (4) for the item measuring strength of belief and ranging from, *I don't believe in God or a Higher Force* (1) to *Extremely close* (4), for the item measuring closeness to God or a Higher Force. Scores range from 1–4 for each individual religiosity variable, and 2–8 for the combined variables that measure the degree of self-reported intrinsic religiosity. Higher scores on the religious strength item suggest a stronger intrinsic sense of religious and/ or spiritual orientation. Similarly, higher scores on the closeness item indicate a greater subjective feeling of closeness to God or a Higher Force. No psychometric properties are available for the two items measuring intrinsic religiosity, perhaps because of the restricted possible range of scores.

Data Analytic Strategy

Power analysis.

In order to determine the required sample size to achieve medium-to-large effect sizes for the present study, alpha was set at .05, power was set at .80, and the effect size f^2 (R^2/ 1-R^2) at .20. According to Cohen (1992), effect sizes for small, medium, and large effects for analyses of variance are .02, .15, and .35, respectively. An a priori analysis for a one-way ANOVA with five groups, expressed as a linear multiple regression, was conducted using G*Power Version 3.1.6, to determine how large the sample size must be in order to achieve a power of .80 (Buchner, Erdfelder, Faul, & Lang, 2009). According to the statistical analytic plan for the present study, group one was composed of demographic variables (gender, ethnicity, marital status, and religious affiliation), group two was health and psychological variables (anxiety, depression, physical functioning, and health status), group three was social support measures (affective, interactive, and dependent social support), group four was spirituality constructs (self-efficacy and life scheme), and intrinsic religiosity constructs (strength of belief and closeness to God/ Higher Force) was group five. Participants were categorized into male or female gender, six ethnic groups, three groups of marital statuses, and four groups of religious affiliations.

Results indicated that to determine the change in R^2 for the five aforementioned groups, suggested sample sizes per group ranged from 53-66 participants (Buchner et al., 2009). For group one, there were 11 total predictors. For group two, with four tested predictors and 15 total predictors, a total sample size of 66 participants was required. For group three, with three tested predictors and 18 total predictors, a total sample size of 60 participants was required. For group four, with two tested predictors and 20 total predictors, a total sample size of 53 participants was required. Lastly, for group five, with two tested predictors and 22 total predictors, a minimum of

54 participants were needed. Therefore, in order to conduct a linear multiple regression to determine change in R^2 for the five groups, given the estimated effect size f^2 (R^2/ 1-R^2), desired power, and number of predictors, the minimum sample size appropriate for the present study's statistical analyses was determined to be 66 participants (Buchner et al., 2009). The archived data set from the author's previously conducted study includes 69 participants, and therefore, meets the recommended sample size in order to conduct the present study's statistical analyses.

Missing data.

Missing data were present in the archived data used for the present study, and tests were conducted to determine if the missing data were Missing Completely at Random (MCAR). All measures were completed by the total number of participants in the study (N = 69), with the exception of four instruments: Zung Self-Rating Anxiety Scale (SAS; n = 68), Spirituality Index of Well-Being (SIWB; n = 68), and one-item measuring closeness to God/ Higher Force (n = 67). The 20-item SAS, the 6-item Life Scheme and 6-item Self-efficacy subscales of the SIWB, and the one-item measuring closeness to God/ Higher Force were all Likert scales, and were examined using Statistical Package for the Social Sciences (SPSS) missing value analysis (MVA; SPSS 20.0, 2011). The MVA module in SPSS imputes values of missing data by using the maximum likelihood method based on expectation-maximization algorithms (Little & Rubin, 1987). Little's MCAR test demonstrated the data were MCAR (Little χ^2 = 10.84, df = 32, p = 1.00). As such, based on these results and the small rate of missing data, it was concluded that the data was MCAR and pairwise deletion was appropriate to use in order to run all statistical analyses for the study (Fields, 2009).

Normality assumption.

The assumption of normality was tested via examination of the unstandardized residuals. Initially, the estimates of skewness and kurtosis were obtained for all study measures, however, based on its unstable z-score estimates, the Kolmogorov-Smirnov (K-S) test for normality was used to determine if the distribution of scores for each measure was normal (Field, 2009). Review of the K-S test for normality suggested that normality was a reasonable assumption for the DAP-R Fear of Death ($D(67) = .10$, $p > .05$), OARS Interactive Social Support ($D(67) = .11$, $p > .05$), and SIWB Life Scheme ($D(67) = .10$, $p > .05$). The boxplot suggested a relatively normal distributional shape (with no outlier) of the residuals. Furthermore, the Q-Q plot and histogram also suggested normality was reasonable for these measures. However, significant values for the K-S test were found for the DAP-R Approach Acceptance, YOHL, MOS SF-36, GDS, SAS, Duke-UNC Functional Social Support Scale, OARS Dependent Social Support, SIWB Self-efficacy, Strength of belief item, and Closeness to God/ Higher Force item, which suggest that the scores for each of these measures or items were significantly non-normal (see Table 2). As a result, both, parametric and non-parametric methods were used to determine which tests would be the most appropriate analytic method and to examine the convergence or divergence of results.

Multicollinearity and Independence.

Initially, the independent variables were examined for multicollinearity. Results of the variance inflation factor (VIF) (all less than 10.0) and tolerance statistic (all greater than .2) suggested that the estimated β values were well established in the aforementioned hierarchical regression models (Field, 2009) (see Table 3 and Table 4).

The Durbin-Watson statistic was obtained to determine independence of residuals against predicted values. The value of the Durbin-Watson ranges from 0 to 4, and a value close to 0 indicates strong positive correlation, while a value of 4 indicates strong negative correlation (Field, 2009). The Durbin-Watson statistics for the regression models of fear of death and approach acceptance were 1.87 and 1.96, respectively, which are considered acceptable. This suggests that the assumption of independent errors has been met for both regression models.

Statistical Design and Analyses

Descriptive statistics for the Participants have been obtained from the archived data set and are described above, under the **Methods** section in terms of age, gender, ethnicity, marital status, categorical education level, and religious affiliations (Table 1). Additional descriptive statistics were provided for self-rated global health status, physical functioning, depression, anxiety, perceived social support, death attitudes, spirituality, and intrinsic religiosity. The means, standard deviations, and ranges were computed for all the continuous variables from the YOHL Scale, PFI of the MOS SF-36, GDS, SAS, Duke-UNC Functional Social Support Scale, Social Interaction and Social Dependence measures of the OARS, Fear of Death and Approach Acceptance subscales of the DAP-R, Life Scheme and Self-Efficacy subscales of the SIWB, and the two items of self-reported intrinsic religiosity. Internal consistency for the following measures and individual items within the measures were also estimated for the present study: YOHL, MOS SF-36, GDS, SAS, Duke-UNC Functional Social Support Scale, OARS, DAP-R, SIWB, and the two items measuring intrinsic religiosity (Table 5).

The first and second aims of the present study, (1) partial replication of research results from Daaleman and Dobbs (2010) with an ethnically diverse sample of institutionalized and chronically ill older adults, specifically Asian and Hawai‘ian or Pacific Islanders, and (2)

determination of potential differences in self-reported levels of death anxiety and hypothesized predictor variables measuring self-rated health status, perceived social support, spirituality, and intrinsic religiosity in an ethnically diverse and institutionalized sample, compared to the community-dwelling participant sample from the study conducted by Daaleman and Dobbs, were addressed by exploring the differences in reported levels of death anxiety and predictor variables in respondents from the present study and the Daaleman and Dobbs sample. The mean scores and standard deviations from the community-dwelling Daaleman and Dobbs sample (N = 257) on the two subscales (fear of death and approach acceptance) from the DAP-R (M = 2.87, SD = 1.18 and M = 5.61, SD = 1.08, respectively), GDS (M = 6.3, SD = 1.5), SAS (M = 43.7, SD = 9.6), YOHL Scale (M = 115, SD = 44.7), PFI of the MOS SF-36 (M = 55.9, SD = 18.0), Duke-UNC Functional Social Support Scale (M = 16.5, SD = 3.0), Social Interaction and Social Dependence measures of the OARS (M = 7.4, SD = 1.5 and M = 2.0, SD = 0.2, respectively), and the Life Scheme and Self-Efficacy subscales of the SIWB (M = 21.3, SD = 4.2 and M = 22.2, SD = 4.1, respectively), were compared to the obtained archived scores from the present study's participant sample. Additionally, a comparison of the number and percentage of participants who endorsed having either a *Strong* or *Somewhat strong* score on the strength of belief item and an *Extremely close* score on the closeness item for the measure of intrinsic religiosity were made between the results from the Daaleman and Dobbs sample (n = 224, 87.8% and n = 154, 60.0%, respectively) and the archived data from the present study's participant sample. In order to determine significant ($p < .05$) mean differences between the results from the two study samples, independent sample t-tests were performed on each measure listed above.

Additionally, hierarchical regression models were constructed based on the initial design and analyses conducted by Daaleman and Dobbs (2010), and each variable in the present study's

hierarchical models were entered in the same order (Study Aims 1 and 2). Demographic variables were entered in the first model, followed by mental and health status in the second model, social support measures in model three, spirituality constructs in model four, and lastly, religiosity constructs in the fifth model. Regression analyses were conducted for the five constructed hierarchical regression models in order to determine if each individual variable was a significant predictor ($p < .05$) and/ or if the variables within the models had a significant contribution ($p < .05$) to the variance in specific death attitudes. Beta coefficients and standard errors were obtained for each individual variable to determine if the independent factor contributed to the explained variance and if it was shown to be a significant predictor of death attitudes. The coefficient of determination R^2 for each of the five models and the change in the R^2 statistic produced by comparing two adjacent models were also obtained to determine the degree of variance accounted for by each model and by the addition of variables within the other constructed models. Results determined the degree of explained variance contributed by demographic, health status, social support, spirituality, and religiosity variables in the outcomes of the two constructs of death attitudes (fear of death and approach acceptance).

These statistical results determined whether the sample of ethnically diverse and institutionalized elderly in Hawai‘i reported significantly higher or lower self-reported levels of death anxiety, depression, anxiety, spirituality, and religiosity, as well as greater or poorer self-reported levels of social support, health status, and physical functioning, in comparison to the sample of community-dwelling older adults from Kansas and North Carolina (Daaleman & Dobbs, 2010).

The remaining three study aims, (3) determination of whether self-constructs related to spirituality (self-efficacy and life scheme) were related to self-reported death attitudes (fear of

death and approach acceptance), (4) determination of whether self-constructs of intrinsic/ subjective religiosity (strength of belief and closeness to God/ Higher Force) were related to self-reported death attitudes (fear of death and approach acceptance), and (5) investigation into the potential meaningful relationships between two constructs of death attitudes with demographic variables, self-rated health status, and perceived social support, were initially addressed by conducting bivariate correlations of death attitude scores from the DAP-R, with demographic variables from the Demographic Questionnaire and with obtained scores from the YOHL Scale, SF-36, GDS, SAS, OARS, Duke-UNC Functional Social Support Questionnaire, SIWB, and the two intrinsic religiosity items. Resulting bivariate correlation coefficients (Pearson r and Spearman r_s) provided evidence to determine whether or not a significant ($p < .05$) relationship existed between specific death attitudes and reported measures of tested constructs and variables.

Correlational and regression analyses addressed the last three aims of the present study, the determination of whether there was a relationship between reported fear of death and approach acceptance of death attitudes, and demographic variables (age, gender, ethnicity, marital status, categorical education level, religious/ spiritual affiliations, self-rated health and mental status (global health status, physical functioning, depression, and anxiety), perceived social support (social interaction, social dependence, and affective support), spirituality (self-efficacy and life scheme), and intrinsic religiosity (strength of belief and closeness to God or a Higher Force).

Stepwise regression analyses were conducted to further examine the relationship between the predictor variables [age, marital status, gender, categorical education level, ethnicity, religious affiliation, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, spirituality (self-efficacy and life scheme), and

intrinsic religiosity (strength of belief and closeness to God or a Higher Force)] and the two constructs of death attitudes (fear of death and approach acceptance). A backward elimination approach was employed in the stepwise regression, initially starting with all the aforementioned predictor variables with tested variables deleted, in order to select and retain significant ($p < .05$) predictors to improve the ability of the regression models in predicting the two outcome variables of death attitudes.

One-way analyses of variance (ANOVAs) and post-hoc procedures were conducted to further examine and address the last study aim, investigation into the potential meaningful relationships between death attitudes (fear of death and approach acceptance) with demographic variables (gender, ethnicity, marital status, religious affiliations). Two types of ANOVA procedures were conducted. Initially, ANOVA procedures that did not control for other covariates or predictor variables previously controlled for in the hierarchical regression models [age, categorical education level, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, spirituality (self-efficacy and life scheme), and intrinsic religiosity (strength of belief and closeness to God or a Higher Force)] were conducted. Subsequently, using a General Linear Model (GLM) univariate analysis of variance with Bonferroni correction, the same categorical demographic variables (gender, ethnicity, marital status, religious affiliations) were examined in the outcomes of fear of death and approach acceptance of death attitudes, while controlling for the aforementioned covariates and other continuous predictor variables. Results, thereby, determined the degree of explained variance contributed by each demographic variable in the outcomes of death attitudes, both independent of the previously examined predictor variables from the regression analyses and controlling for them.

Furthermore, to address the last study aim, a cross-tabulation between ethnicity and religious affiliation with a chi-square test for categorical variables was conducted in order to determine the relationship between these two demographic variables. Based on the results, regression analyses were conducted to examine the potential interaction between these predictor variables (ethnicity and religious affiliation) in the outcome of death attitudes (fear of death and approach acceptance of death attitude). Regression analyses were also conducted to examine if there was any potentially significant moderation between marital status and other demographic variables (i.e., age, gender, ethnicity, and religious affiliation) on death attitudes.

All statistical analyses were performed using IBM SPSS version 20.0 (SPSS 20.0, 2011).

RESULTS

Internal Consistency

In order to examine the reliability of the archived measures used for the present study, internal consistency for each measure and each item within the measures were computed using Cronbach's alpha (Table 5). The majority of the measures evidenced acceptable to high internal consistency given these instruments are designed to assess fairly homogeneous constructs for which items are expected to be inter-related: MOS SF-36 (10-items; $\alpha = .93$), GDS (15-items; $\alpha = .82$), SAS (20-items; $\alpha = .76$), Duke-UNC Affective Social Support Scale (3-items; $\alpha = .70$), DAP-R Fear of death (7-items; $\alpha = .87$) and Approach acceptance (10-items; $\alpha = .89$) subscales, and SIWB Self-efficacy (6-items; $\alpha = .84$) and Life Scheme (6-items; $\alpha = .82$) subscales. The two items measuring intrinsic religiosity ($\alpha = .69$) and the two items of the Social Dependence subscale of the OARS ($\alpha = .66$) evidenced moderate inter-relatedness. Furthermore, the three items measuring Social Interaction on the OARS ($\alpha = .37$) evidenced low inter-relatedness. Increasing the alpha value is partially dependent upon the number of items in a scale and as such,

it should be noted that the measures with relatively low Cronbach's alpha had two to three items within each scale (Field, 2009). Nevertheless, the variables of intrinsic religiosity, social dependence, and social interaction were included in other analyses despite potential measurement error.

Moreover, item-total statistics for each item (i.e., Cronbach's alpha, if item deleted), within each of the aforementioned measures were also reported to determine the reliability of the each item within a measure (see Table 5). The Cronbach's alpha coefficients when items were deleted within each measure remained relatively stable for all measures and compared to the overall Cronbach's alpha for the measures: MOS SF-36 [10-items; α = .92 (Q8)-.94(Q1)], GDS [15-items; α = .80 (Q12)-.84 (Q9)], SAS [20-items; α = .71 (Q1)-.79 (Q17)], DAP-R Fear of death [7-items; α = .83 (Q4)-.87 (Q1)] and Approach acceptance [10-items; α = .87 (Q5)-.90 (Q10)] subscales, and SIWB Self-efficacy [6-items; α = .78 (Q5)-.83 (Q1)] and Life Scheme [6-items; α = .75 (Q4)-.83 (Q1)] subscales. Two items (Q1 & Q2) on the Duke-UNC Affective Social Support Scale [3-items; α = .36 (Q2)-.81 (Q3)] and all three items on the OARS Social Interaction subscale [3-items; α = .09 (Q2)-.40 (Q1)] evidenced low Cronbach's alphas. However, it should be noted that these items were from scales that also evidenced low inter-relatedness (as reported above). As such, these items were retained in the measures for all subsequent analyses.

Descriptive Analyses

Demographic characteristics of the archived sample of 69 institutionalized older adults are presented in Table 1. Means, standard deviations, and ranges were examined for the sample's self-rated global health status, physical functioning, depression, anxiety, perceived social support, death attitudes, spirituality, and religiosity, and these results are presented in Table 6.

Over half of the present sample (*n* = 39; 56.5%) reported *fair* or *poor* self-rated health on the Years of Healthy Life Scale (YOHL). Participants also reported low physical functioning (*M* = 49.03, *SD* = 19.39), as assessed by the Physical Functioning Index (PFI) of the Medical Outcomes Study 36-Item Short-form Health Survey (MOS SF-36) (i.e., physical function score ≤ 70) (Stewart et al., 1988). The sample reported a mean score of 5.22 (*SD* = 3.66) on the Geriatric Depression Scale (GDS) and a mean score of 32.97 (*SD* = 7.71) on the Zung Self-Rating Anxiety Scale (SAS). This indicates the study participants endorsed GDS scores suggestive of mild depressive symptomatology (cut-off score of 5; Herrmann et al., 1996) and minimal anxious symptomatology (*M* = 58.7, *SD* = 13.5 for Anxiety Disorders; Zung, 1971). Various types of social support were also reported: Affective Social Support (*M* = 4.58, *SD* = 2.52) from the Duke-UNC Functional Social Support Scale, as well as Social Interaction (*M* = 4.83, *SD* = 2.28) and Social Dependence (*M* = 1.88, *SD* = .40) from the Older American Resources & Services Questionnaire (OARS). Furthermore, participants reported a mean score of 3.50 (*SD* = 1.57) on the Fear of Death and a mean score of 5.42 (*SD* = 1.24) on the Approach Acceptance subscales of the Death Attitude Profile-Revised (DAP-R). On the Spirituality Index of Well-Being (SIWB), participants reported a mean score of 23.15 (*SD* = 5.24) on the Life Scheme and a mean score of 21.09 (*SD* = 5.93) on the Self-Efficacy subscales. Moreover, 82.6% (*n* = 57) of the sample reported they were *strongly* or *somewhat strongly* religious or spiritual, and 65.2% (*n* = 45) reported they felt *extremely* close to God or a Higher Force.

Independent Sample T-Tests: Present Study vs. Daaleman and Dobbs (2010) Study

Independent sample t-tests were performed on each measure listed above to determine significant mean differences between the results from the two study samples with unequal variances (see Table 6). In comparison to the sample of community-dwelling older adults from

Kansas and North Carolina from the study conducted by Daaleman and Dobbs (2010) (M = 2.87, SD = 1.18), the present study with an ethnically diverse sample of institutionalized elderly, reported significantly greater fear of death (M = 3.50, SD = 1.57), $t(90) = -3.11$, $p < .01$. A greater percentage of participants in the present study reported significantly poorer physical functioning, $t(102) = 2.66$, $p < .01$, as well as significantly lower levels of interactive, $t(84) = 8.86$, $p < .001$, dependent, $t(77) = 2.39$, $p < .05$, and affective social support, $t(125) = 33.47$, $p < .001$, compared to the Daaleman and Dobbs sample. Moreover, compared to the Daaleman and Dobbs study, the present study's sample also reported experiencing significantly lower levels of depression, $t(74) = 2.40$, $p < .05$, and anxiety, $t(130) = 9.71$, $p < .001$, and significantly greater levels of life scheme, $t(91) = -2.69$, $p < .01$. Additionally, a greater percentage of participants in the present study sample reported poorer self-rated health compared to the Daaleman and Dobbs sample. Self-efficacy and approach acceptance were not found to be significantly different between the two samples. Furthermore, measures of intrinsic religiosity were comparable in both samples.

Hierarchical Regression Models

Hierarchical regression models were constructed based on the initial design and analyses conducted by Daaleman and Dobbs (2010), and each variable in the hierarchical models for the present study were entered in the same order. Demographic variables were entered in the first model, followed by mental and health status in the second model, social support measures in model three, spirituality constructs in model four, and lastly, religiosity constructs in the fifth model. Since religious affiliation was an obtained variable from the archival data, this predictor variable was added into the first model as a demographic characteristic, and was not an obtained variable in the Daaleman and Dobbs study and therefore, not included in their regression

analyses. Regression analyses were run for the two constructs of death attitudes to determine the degree of explained variance contributed by demographic, health status, social support, spirituality, and religiosity variables in the outcomes of fear of death and approach acceptance of death attitudes.

Hierarchical Regression for Fear of Death Attitude

A multiple regression was run to predict fear of death from the five constructed hierarchical regression models, and to determine if the obtained variables within the models had a significant contribution to the variance in specific death attitudes (see Table 7).

Demographics in model one accounted for 21.1% of the variance, but this did not significantly predict fear of death, $F(13, 53) = 1.09$, $p > .05$). However, within this model, higher education level ($\beta = -.29$, $p < .05$) was found to be a significant predictor of lower fear of death. An analysis of variance indicated models two and three were significant fits of the data overall, with the second model adding the greatest significant predictive power in predicting fear of death, accounting for a significant increase in explained variance ($\Delta R^2 = .19$, $p < .01$). In other words, when self-reported depression, anxiety, physical functioning, and health status were entered into the second model, these variables accounted for 40.5% of the variance, $F(17, 49) = 1.97$, $p < .05$, $R^2 = .41$. Within this model, anxiety ($\beta = .37$, $p < .01$) contributed significantly to the variance. In other words, older adults who reported higher anxiety also had greater fear of death.

The addition of social support and spirituality variables in models three and four, respectively, had no significant contribution to the overall model. However, within model three, widowed marital status ($\beta = .33$, $p < .05$), higher levels of education ($\beta = -.33$, $p < .05$), and lower reported anxiety ($\beta = .36$, $p < .05$) were found to be significant predictors of lower fear of

death. In model four, widowed marital status (β = .33, $p < .05$) remained a significant predictor. Finally, in the final model with religiosity variables, all predictor variables accounted for 47.4% of the variance, $F(24, 42) = 1.58$, $p > .05$, $R^2 = .47$, but this was not statistically significant. Within this model, while controlling for all other predictors, widowed marital status was found to be a significant predictor of lower fear of death attitude (β = .34, $p < .05$). Descriptive analyses (*n*, *M*, *SD*) of the demographic variables by fear of death attitude are identified in the ANOVA section further below and on Table 12.

Hierarchical Regression for Approach Acceptance of Death Attitude

An analysis of variance indicated all models (1-5) were significant fits of the data overall, with the first ($\Delta R^2 = .41$, $p < .01$) accounting for significant increases in explained variance (see Table 8).

Demographics in model one accounted for 41.7% of the variance, and this significantly predicted approach acceptance of death attitude $F(13, 53) = 2.92$, $p < .01$, $R^2 = .42$). Within this model, gender (β = .26, $p < .05$) and religious affiliation (β = -.31, $p < .05$) were significant predictors of approach acceptance. Women and Catholics had higher approach acceptance scores compared to men and Other religious/ spiritual affiliations (i.e., Unreported, Spiritualist, Agnostic, Atheist, or Muslim). The remaining four models (2-5) did not significantly account for an increase in additional variance. However, Catholic religious affiliation (β = -.31, $p < .05$) remained a significant predictor in model three. When intrinsic religiosity variables were entered in model five, these variables accounted for 55.6% of the variance in approach acceptance, $F(24, 42) = 2.20$, $p < .05$, $R^2 = .56$, but this was not significant and no significant predictors were found in the final model. Descriptive analyses (*n*, *M*, *SD*) of the demographic variables by approach acceptance of death attitude are identified in the ANOVA section further below and on Table 12.

Correlations

Bivariate correlations using parametric and non-parametric tests, Pearson's *r* and Spearman's *rho*, respectively, were conducted to determine the relationship between self-reported death attitudes (fear of death and approach acceptance) and self-constructs related to spirituality (self-efficacy and life scheme) and to intrinsic/ subjective religiosity (strength of belief and closeness to God/ Higher Force), demographic variables, self-rated mental and health status, and perceived social support. Using Pearson's correlation, greater fear of death was significantly correlated with greater depression ($r = .28$, $p < .05$) and greater anxiety ($r = .33$, $p < .01$). Greater fear of death also was significantly correlated with lower educational level ($r = -.26$, $p < .05$), lower self-efficacy ($r = -.33$, $p < .01$), and lower life scheme ($r = -.40$, $p < .001$). Greater approach acceptance was significantly correlated with female gender ($r = .23$, $p < .01$), greater strength of belief ($r = .46$, $p < .001$), and greater closeness to God/ Higher Force ($r = .38$, $p < .001$) (see Table 9).

Additionally, further analyses were conducted using Spearman's rho correlation and relatively consistent results were found. Greater fear of death was significantly correlated with greater depression ($r_s = .27$, $p < .05$), lower educational level ($r_s = -.28$, $p < .05$), lower self-efficacy ($r_s = -.32$, $p < .01$), and lower life scheme ($r_s = -.41$, $p < .001$). Greater approach acceptance was significantly correlated with female gender ($r_s = .30$, $p < .01$), greater strength of belief ($r_s = .40$, $p < .001$), and greater closeness to God/ Higher Force ($r_s = .28$, $p < .05$), In comparison to results from Pearson's correlation, anxiety was not significantly correlated with fear of death using the nonparametric approach (see Table 9).

Stepwise Regression for Fear of Death Attitude

Results from the stepwise regression using a backward elimination method indicated the spirituality construct of life scheme and the demographic variable of marital status were significant predictors of fear of death attitude (see Table 10 and Figure 1). Specifically, when all predictor variables [age, marital status, gender, categorical education level, religious affiliation, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, spirituality (self-efficacy and life scheme), and intrinsic religiosity (strength of belief and closeness to God or a Higher Force)] were entered to determine the outcome of fear of death, life scheme ($\beta = -.40$, $p < .001$) was found to be a significant predictor in model one and contributed 15.9% of the variance in fear of death, $F(1, 65) = 12.29$, $p < .001$, $R^2 = .16$. In other words, older adults who are able to create a spiritual sense of coherence in one's life (greater reported levels of life scheme) have significantly less fear of death. In the second model, life scheme remained a significant predictor ($\beta = -.44$, $p < .001$), as well as widowed marital status ($\beta = .23$, $p < .05$) being significantly associated with lower fear of death. With the addition of marital status to life scheme, it significantly increased the variance of the model ($\Delta R^2 = .05$, $p < .05$) and accounted for 21.1% of the variance in fear of death, $F(2, 64) = 8.58$, $p < .001$, $R^2 = .21$.

Stepwise Regression for Approach Acceptance of Death Attitude

The intrinsic religiosity item measuring strength of belief and demographic variables (marital status and religious affiliation) were significant predictors retained in the stepwise regression for the outcome of approach acceptance of death attitude (see Table 11 and Figures 1 and 2). Strength of belief ($\beta = .46$, $p < .001$) was a significant predictor retained in the first model and accounted for 21.2% of the variance in approach acceptance, $F(1, 65) = 17.50$, $p < .001$, $R^2 =$

.21. Therefore, older adults who reported stronger intrinsic religiosity, specifically, greater strength in their religious or spiritual beliefs, had higher approach acceptance of death attitude. In the second model, strength of belief ($\beta = .47$, $p < .001$) and marital status ($\beta = -.23$, $p < .05$) were significant predictors of approach acceptance. With the addition of marital status to strength of belief, it significantly increased the variance of the model ($\Delta R^2 = .05$, $p < .05$) and accounted for 26.5% of the variance in approach acceptance, $F(2, 64) = 11.53$, $p < .001$, $R^2 = .27$. In the third model, the inclusion of religious/ spiritual affiliation accounted for 31.7% of the variance in approach acceptance, $F(3, 63) = 9.76$, $p < .001$, $R^2 = .32$, ($\Delta R^2 = .05$, $p < .05$). Within the final model, greater strength of belief ($\beta = .43$, $p < .001$), widowed marital status ($\beta = -.23$, $p < .05$), and Catholic religious affiliation ($\beta = -.23$, $p < .05$) were significantly associated with higher approach acceptance. Descriptive analyses (*n*, *M*, *SD*) of the demographic variables by death attitudes are identified in the ANOVA section further below and on Table 12.

Analysis of Variance (ANOVA) of Death Attitudes and Demographic Variables – Not Controlling for Covariates and Other Predictor Variables

Marital status.

An one-way analysis of variance (ANOVA) indicated there was no significant difference in fear of death, $F(2, 66) = .98$, $p > .05$; partial $\eta^2 = .03$, and approach acceptance, $F(2, 66) = 1.55$, $p > .05$; partial $\eta^2 = .05$, based on an individual's marital status (see Table 13 and Table 14). The ANOVA results did not control for covariates or the other predictor variables included in the regression analyses (age, categorical education level, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, self-efficacy, life scheme, strength of belief, and closeness to God or a Higher Force). The Kruskal Wallis test, a nonparametric test, confirmed these results as there were no significant differences

in fear of death, $H(2) = 1.82$, $p > .05$, and approach acceptance, $H(2) = 3.37$, $p > .05$, based on marital status.

Religious affiliation.

Religious affiliation had a significant effect on approach acceptance, $F(3, 65) = 4.66$, $p < .01$; partial $\eta^2 = .18$. In other words, 17.7% of the variance in approach acceptance can be explained by an individual's religious affiliation, when all other covariates or predictor variables are not controlled for (see Table 13 and Table 14). The Kruskal Wallis test, confirmed these results as there was no significant difference in fear of death, $H(3) = 5.69$, $p > .05$, but there was a significant difference in approach acceptance, $H(3) = 13.97$, $p < .01$, based on religious affiliation. Post hoc Tukey tests revealed that the mean score on the approach acceptance measure was significantly different between individuals who identified themselves as Catholic ($M = 5.95$, $SD = .87$) and those who identified themselves as Buddhist ($M = 4.68$, $SD = 1.35$), but not between other religious affiliations. In other words, those from Catholic faiths had significantly higher approach acceptance than Buddhists, (Mean difference = 1.27, $p < .01$) (see Table 12 and Figure 2).

Gender.

Based on results from the ANOVA, gender had a significant effect on approach acceptance, $F(1, 67) = 8.03$, $p < .01$; partial $\eta^2 = .11$, while not controlling for all other predictor variables included in the regression analyses (see Table 13 and Table 14). Post hoc analyses indicated that females ($M = 5.75$, $SD = .99$) had significantly higher approach acceptance compared to males ($M = 4.93$, $SD = 1.41$) (see Table 12 and Figure 1). A Mann-Whitney test confirmed these results as fear of death in females did not significantly differ from males, $U =$

555.00, $z = -.23$, $p > .05$, but approach acceptance significantly differed based on gender, $U = 373.00$, $z = -2.46$, $p < .05$.

Ethnicity.

Prior to conducting an ANOVA for ethnicity, the subscales of Fear of Death and Approach Acceptance of the DAP-R were tested for homogeneity of variance using Levene's test. Results indicated that for Fear of Death, the variances were not significantly different between ethnic groups, $F(5, 63) = 1.10$, $p > .05$. In other words, the ethnic groups were similar and the homogeneity of variance assumption was tenable. However, for Approach Acceptance scores, the variances were significantly different among the six ethnic groups, $F(5, 63) = 4.03$, $p < .01$, indicating heterogeneity of variance. As a result, the Games Howell test was more appropriate to use for the post hoc analyses (Field, 2009). Ethnicity had a significant effect on approach acceptance, $F(5, 63) = 2.39$, $p < .05$; partial $\eta^2 = .16$, when all other covariates or predictor variables from the regression analyses were not controlled for (see Table 13 and Table 14). In other words, 16% of the variance in the change in approach acceptance scores can be explained by ethnicity. Results from the post hoc analyses revealed that individuals who identified Japanese ($M = 5.14$, $SD = 1.24$) as their primary ethnicity had significantly lower scores on approach acceptance compared to those who identified as Filipinos ($M = 6.23$, $SD = .69$) (Mean difference = -1.09, $p < .05$) and Others ($M = 6.01$, $SD = .59$) (Mean difference = -.87, $p < .05$) (see Table 12 and Figure 3).

Analysis of Variance (ANOVA) of Death Attitudes and Demographic Variables – Controlling for Covariates and Other Predictor Variables

Marital status.

An univariate GLM procedure with Bonferroni correction indicated there was no significant difference in fear of death, $F(2, 50) = 2.21$, $p > .05$; partial $\eta^2 = .08$, and approach acceptance, $F(2, 50) = 1.17$, $p > .05$; partial $\eta^2 = .05$, based on an individual's marital status (see Table 15 and Table 16). The ANOVA results controlled for covariates and other continuous predictor variables included in the regression analyses (age, categorical education level, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, self-efficacy, life scheme, strength of belief, and closeness to God or a Higher Force).

Religious affiliation.

While controlling for the aforementioned covariates and predictor variables, religious affiliation had no significant effect on fear of death attitude, $F(3, 47) = .71$, $p > .05$; partial $\eta^2 = .04$, or approach acceptance of death attitude, $F(3, 47) = 1.44$, $p > .05$; partial $\eta^2 = .08$. In other words, there was no significant difference in fear of death and approach acceptance of death attitudes between individuals who identified themselves as Catholic, Protestant/ Other Christian, Buddhist, or Other religious affiliations (i.e., Spiritualist, Agnostic, Muslim, Atheist, or Unreported/Other) (see Table 15 and Table 16).

Gender.

Based on results from the GLM univariate analysis with Bonferroni correction, gender had no significant effect on fear of death, $F(1, 52) = 1.07$, $p > .05$; partial $\eta^2 = .02$, or approach

acceptance, $F(1, 52) = 2.08$, $p > .05$; partial $\eta^2 = .04$, when the covariates and predictor variables entered in the regression analyses were controlled (see Table 15 and Table 16).

Ethnicity.

Ethnicity did not have a significant effect on fear of death, $F(5, 47) = 1.07$, $p > .05$; partial $\eta^2 = .10$, or on approach acceptance, $F(5, 47) = 1.28$, $p > .05$; partial $\eta^2 = .12$, when the covariates, age, categorical education level, global health status, physical functioning, depression, anxiety, social interaction, social dependence, affective support, self-efficacy, life scheme, strength of belief, and closeness to God or a Higher Force, were controlled for (see Table 15 and Table 16). In other words, there was no significant difference in the two constructs of death attitudes between individuals who identified Filipino, Hawai‘ian or Pacific Islander, Japanese, Caucasian, Chinese, or Other (African American or Hispanic) as their primary ethnicity.

Death Attitudes and Demographic Variables – Interactions

Ethnicity and Religious affiliation.

Initially, a cross-tabulation between ethnicity and religious affiliation was conducted using both Pearson's chi-square test and Fisher's exact test, due to the small sample size (expected frequencies < 5) (Field, 2009). Results from the Pearson's chi-square test indicated there was a significant relationship between ethnicity and religious affiliation, $\chi^2(15) = 46.96$, $p < .001$, similar to Fisher's exact test ($p < .001$) (see Table 17 and Figure 4). Furthermore, Cramer's V coefficient of .48 indicated a very strong relationship between these two demographic variables. Specifically, 71.4% ($n = 5$) of Caucasians reported Catholicism as their religious affiliation, 50.0% ($n = 13$) of Japanese individuals reported Buddhism and 30.8% ($n =$

8) reported Protestant or Other Christian. 88.9% (n = 8) of Filipinos reported to be Catholic, and 50.0% (n = 5) of Hawai‘ian or Pacific Islanders reported Other religious/ spiritual affiliations.

Based on these results, regression analyses were conducted to test for an interaction effect between ethnicity and religious affiliation in the outcomes of fear of death and approach acceptance of death attitudes (see Table 18 and Table 19). For both, fear of death and approach acceptance of death attitudes, ethnicity and religious affiliation were entered in model one to determine if these variables would significantly contribute to the variance in each of the death attitudes. To determine an interaction effect, the interaction variable (ethnicity x religious affiliation) was added to the second model. Results indicated no significant effects between ethnicity, religious affiliation, and the interaction variable, in the outcome of fear of death attitude (see Table 18).

For the outcome of approach acceptance of death attitude, results from the regression indicated that in model one, ethnicity and religious affiliation significantly accounted for 27.8% of the variance in approach acceptance, $F(8, 60) = 2.89$, $p < .01$, $R^2 = .28$ (see Table 19). Specifically, within this model, individuals who reported an Other religious affiliation (i.e., Unreported/Other, Muslim, Atheist, Agnostic, Spiritualist) ($\beta = -.31$, $p < .05$) had significantly lower approach acceptance. In model two, which included the variables of ethnicity, religious affiliation, and the interaction variable (ethnicity x religious affiliation), it accounted for 28.2% of the variance, $F(2, 66) = 4.08$, $p < .01$, $R^2 = .16$, but this was not significant. This indicates that with the addition of the interaction variable in model two, there was no significant increase in the variance than with ethnicity and religious affiliation alone ($\Delta R^2 = .00$, $p > .05$) and within this model, all predictor variables were not found to be significant ($p > .05$). These results suggest

that Catholics and Filipinos had significantly higher approach acceptance compared to Buddhists and Japanese (see Figure 5).

Marital status and Gender.

Based on the results from the stepwise regression analyses, marital status was further explored by conducting regression analyses to test for an interaction effect between this variable and other demographic variables (i.e., ethnicity, gender, religious/ spiritual affiliation, and age) in the outcomes of fear of death and approach acceptance of death attitudes. Results indicated no significant interactions between marital status and ethnicity, religious/ spiritual affiliation, or age. However, there was a significant interaction between marital status and gender in the outcome of fear of death, but not for approach acceptance (see Table 20 and Table 21). For both, fear of death and approach acceptance of death attitudes, marital status and gender were entered in model one to determine if these variables would significantly contribute to the variance in each of the death attitudes. To determine an interaction effect, the interaction variable (marital status x gender) was added to the second model.

Results from the regression indicated that in model one, marital status and gender accounted for 3.1% of the variance in fear of death, $F(3, 65) = .70$, $p > .05$, $R^2 = .03$, but this was not significant (see Table 20). In model two, with the addition of the interaction variable, there was a significant increase in the variance than with marital status and gender alone ($\Delta R^2 = .09$, $p < .05$). Within this model, males ($\beta = -.83$, $p < .05$) and married ($\beta = .32$, $p < .05$) elders had significantly greater fear of death compared to females and widows. The interaction variable (marital status x gender) was also found to be significant ($\beta = .99$, $p < .05$). These results suggest that there was potentially significant moderation between marital status and gender on fear of death (see Figure 1).

For the outcome of approach acceptance of death attitude, marital status and gender significantly accounted for 11.5% of the variance, $F(3, 65) = 2.83$, $p < .05$, $R^2 = .12$ (Table 21). However, within this model, female gender ($\beta = .31$, $p < .05$) was the only significant predictor of higher approach acceptance of death. There was no significant increase in the variance in model two with the interaction variable than with marital status and gender alone ($\Delta R^2 = .00$, $p > .05$) and within this model, all predictor variables were not found to be significant ($p > .05$) (see Figure 1).

DISCUSSION

The present study used an archived data set to explore the theory that greater self-reported spirituality and intrinsic religiosity have beneficial effects on death attitudes in the elderly. The present study had five major aims: (1) partial replication of research results from Daaleman and Dobbs (2010) with an ethnically diverse sample, primarily Asian and Hawai‘ian or Pacific Islanders, of institutionalized and chronically ill older adults, (2) determination of potential differences in self-reported levels of death anxiety and hypothesized predictor variables measuring self-rated health status, perceived social support, spirituality, and intrinsic religiosity in an ethnically diverse and institutionalized sample, compared to the community-dwelling participant sample from the study conducted by Daaleman and Dobbs, (3) determination of whether self-constructs related to spirituality (self-efficacy and life scheme) were related to self-reported death attitudes (fear of death and approach acceptance), (4) determination of whether self-constructs of intrinsic/ subjective religiosity (strength of belief and closeness to God/ Higher Force) were related to self-reported death attitudes (fear of death and approach acceptance), and (5) investigation into the potential meaningful relationships between two constructs of death attitudes with demographic variables, self-rated health status, and perceived social support.

Previous research in the field has supported the association between spirituality or intrinsic religiosity, and the multidimensional nature of death attitudes, but has not explored these relationships within a multi-ethnic, chronically ill, and institutionalized geriatric sample (Ardelt, 2003; Daaleman & Dobbs, 2010; Downey, 1984; McClain, Rosenfeld, & Breitbart, 2003; Rappaport, Fossler, Bross, & Gilden, 1993; Fry, 2003; Wink & Scott, 2005; Wong, Tang, & Kwok, 2002). Past studies have primarily focused on a majority Caucasian and Christian sample, and the present study was the first known study to focus on a majority-minority sample, focusing primarily on Asian and Hawai‘ian or Pacific Island elders, examining death attitudes and the psychological, physical, and social constructs related to them (Downey, 1984; Fortner & Neimeyer, 2010; Fry, 2003; McClain et al., 2003; Rappaport et al., 1993; Wink & Scott, 2005). Furthermore, the inclusion of religious/ spiritual affiliation as a demographic variable was novel to the study, as previous studies, including Daaleman and Dobbs' study, have not examined the potential influence this demographic characteristic has on a primarily multi-ethnic population.

Results from the present study support significant relationships between two specific death attitudes and demographic characteristics, psychological variables, and self-constructs related to intrinsic religiosity and spirituality via correlational and regression analyses (Study Aims 3, 4, and 5). Additionally, one-way ANOVAs and post hoc tests revealed differences in approach acceptance of death attitudes with relation to several participant demographic variables, when all other covariates and predictor variables from the regression analyses were not controlled for (Study Aim 5). Specifically, differences in approach acceptance of death attitude were found among different ethnic minority groups, spiritual/ religious affiliations, and gender.

Descriptive statistics indicated significant differences between the 257 community-dwelling participants from the Daaleman and Dobbs (2010) study and the present study's

archived data set of 69 institutionalized participants (Study Aim 2). Participants from the present study were older in age and had a lower education level. Older age is likely due to the Daaleman and Dobbs study using age 50 as an inclusion criterion whereas the present study used age 65. The present study's sample was also predominately widowed (*n* = 35; 50.7%), whereas the Daaleman and Dobbs sample was largely married (*n* = 131; 51.0%). Furthermore, the majority of the sample from the present study was from an ethnic minority group (*n* = 62; 89.9%), with the majority identifying as Asian (Chinese, Japanese, or Filipino) and Hawai'ian or Pacific Islander (*n* = 55; 79.7%), and the largest percentage reporting their primary ethnicity as Japanese (*n* = 26; 37.7%) (Study Aim 1). The Daaleman and Dobbs study had a majority Caucasian sample (*n* = 176; 68.4%), and a small percentage of participants were from an ethnic minority group (*n* = 72; 31.6%) (see Table 1).

Significantly greater fear of death, poorer physical functioning and self-rated health, and lower levels of social support (interactive, dependent, and affective) were found in the participant sample from the present study compared to the Daaleman and Dobbs (2010) study via independent sample t-tests (Study Aim 2). Poorer physical functioning and self-rated health in the present study is likely to be partly due to recruitment of participants from institutions whereas the Daaleman and Dobbs study recruited from a community-based sample. Results also demonstrated significantly lower depression and anxiety, and higher scores in the spirituality construct of life scheme for the present study's sample compared to Daaleman and Dobbs. Self-efficacy, approach acceptance, and intrinsic religiosity were comparable, being not significantly different in both study samples.

Significant relationships between fear of death and education level, depression, anxiety, self-efficacy, and life scheme were found via correlational analyses (Study Aim 3 and 5). Greater

fear of death was correlated with lower spirituality and education level, and higher self-rated depression and anxiety. Additionally, higher approach acceptance of death attitudes was significantly related to female gender and lower intrinsic religiosity (strength of belief and closeness to God/ Higher Force) (Study Aims 4 and 5). The significant relationships between fear of death and education level, depression, anxiety, and spirituality, as well as between, approach acceptance and education level and intrinsic religiosity from the present study were convergent with results from the Daaleman and Dobbs (2010) study (Study Aim 2).

In addition to these findings, Daaleman and Dobbs (2010) found that greater levels of interactive and affective social support were significantly correlated with lower fear of death. Additionally, they found that higher approach acceptance of death attitude was significantly correlated with older age, higher anxiety, better self-rated health, and stronger self-efficacy. These relationships were not found to be significant in the present study. Nevertheless, results from the present study found that within a primarily Asian and Hawai‘ian or Pacific Islander sample, ethnicity had a significantly large effect on approach acceptance of death attitudes $F(5, 63) = 2.39$, $p < .05$; partial $\eta^2 = .16$, whereas, Daaleman and Dobbs only found that ethnicity had small effects on psychological and physical variables ($r = \pm .1$). Furthermore, by including and examining the demographic characteristic of religious/ spiritual affiliation, it was found that there was a significantly large effect size with approach acceptance of death attitude $F(3, 65) = 4.66$, $p < .01$; partial $\eta^2 = .18$. These results indicate that ethnicity and religious/ spiritual affiliation are important demographic variables to consider when examining death attitudes within a multi-ethnic elderly population (Study Aim 5).

Moreover, congruent with the literature and previous empirical findings, the two constructs of spirituality, self-efficacy and life scheme were found to be positively correlated to

one another (Daaleman & Dobbs, 2010; Frey, Daaleman, & Peyton, 2005) (Study Aim 3). Not only were both constructs of spirituality significantly correlated with fear of death, but they also had a positive relationship with education level and interactive social support, and a negative relationship with depression, anxiety, and affective social support. Similarly, the two measures of intrinsic religiosity, strength of belief and closeness to God/ Higher Force, were significantly correlated to one another, a finding divergent from the Daaleman and Dobbs study, but consistent with the theoretical frameworks provided by Downey (1984) and Hoge (1972) (Study Aim 4). Furthermore, strength of belief had a small effect with gender, affective social support, and self-efficacy. The other construct of intrinsic religiosity, closeness to God/ Higher Force, had a small effect with age and depression.

The two items measuring intrinsic religiosity were not significantly correlated to the two measures of spirituality, providing some evidence for the theoretical notion that spirituality and intrinsic religiosity are indeed two distinct constructs (Daaleman & Dobbs, 2010). Spirituality has been commonly defined as a personal search for meaning and faith, and characterized by the ability to find purpose in one's life (Breitbart, 2001; Frey, Daaleman & Peyton, 2005; Peteet, 1994). While, intrinsic religiosity is described as a stronger sense of faith (Wink & Scott, 2005). Providing further evidence, results from the present study showed that individuals who reported higher levels of spirituality had significantly less fear of death, and those who reported greater intrinsic religiosity had significantly greater approach acceptance. Interestingly, spirituality had no significant relationship with approach acceptance, and intrinsic religiosity had no significant relationship with fear of death. These relationships indicate that individuals who report greater capability in managing their present lives and find purpose in it (i.e., higher spirituality, self-efficacy, and life scheme) are more likely to view death and its challenges without fear (i.e.,

lower fear of death). However, these individuals did not score significantly higher on the Approach Acceptance subscale of the DAP-R. This indicates that fear of death may be better predicted by an individual's personal experiences (e.g., coping strategies, beliefs of global functioning, meaning making, view of self and the world, etc.), rather than by one's spiritual or religious beliefs.

These results provide further empirical evidence for the notion that individuals who are able to find personal meaning in one's present life and have stronger ego integrity are less likely to develop a sense of despair in the retrospection of one's life, thereby, decreasing the fear associated with facing one's future and death (Bandura, 1997; Erikson, 1963; Frey et al., 2005; Fry, 2003; van Lommel et al., 2001; Wong et al., 1994). In addition, individuals who report stronger religious/ spiritual beliefs and feel closer to God/ Higher Force (i.e., higher intrinsic religiosity) are more likely to view one's own death with a positive affective reaction (i.e., higher approach acceptance). Based on previous theoretical work, it is thought that individuals who have a stronger sense of faith and rooted religious beliefs are more likely to have a firmer view of the afterlife, leading to less uncertainty about life after death, and as a result, a propensity for approaching the afterlife with a more favorable outlook and promoting approach acceptance of death attitude (Drolet, 1990; Neimeyer, 1994; Wink & Scott, 2005).

Another plausible explanation for these findings is that the items on the approach acceptance subscale of the DAP-R appear largely biased towards terminology and concepts related to those from Judeo-Christian religious backgrounds (e.g., heaven, God, blessed place). These concepts may have been more aligned with and familiar to individuals from specific religious faiths and as such, those who do not follow these religious beliefs may have interpreted the items differently. The development and validation of the DAP-R did not examine the

potential differences in scores based on an individual's religious, spiritual, or cultural background (Wong et al., 1994). Additionally, the DAP-R scores were normed with a majority White/ Caucasian sample, and previous research has found significantly different DAP-R scores based on ethnicity (Matsui & Braun, 2009). As a result, more attention should be paid towards developing measures examining death attitudes in diverse populations with increased emphasis on the role demographic characteristics and culture play in this field of study. In addition, it is recommended that future development of death attitude measures be more sensitive to a variety of different religious and spiritual beliefs (i.e., non-Christian faiths). For example, some Hawai‘ians believe there are spirits in natural events, such as ocean waves, and such beliefs are not assessed on the DAP-R.

Regression analyses examined the predictive relationship between demographic variables, health status, social support, spirituality, intrinsic religiosity and the outcomes of fear of death attitude and approach acceptance of death attitude (Study Aims 2, 3, 4, and 5). The hierarchical regression models for fear of death and approach acceptance of death attitudes included demographics (age, marital status, gender, education, ethnicity, and religious/ spiritual affiliation) in model one, health status (depression, anxiety, self-rated health, and physical functioning) in model two, social support (interactive, dependent, and affective) in model three, spirituality (self-efficacy and life scheme) in model four, and intrinsic religiosity (strength of belief and closeness to God/ high force) in model five.

Results from the fear of death hierarchical regression indicated that psychological and physical health characteristics (depression, anxiety, self-rated health status, and physical functioning) within the second model explained 40.5% of the variance and was the only model, compared to the four other hierarchical regression models to account for a significant increase of

the variance in explaining fear of death ($\Delta R^2 = .19$, $p < .01$), beyond the first model with demographic characteristics. Similarly, the Daaleman and Dobbs (2010) study also found that model two accounted for a significant increase in the variance ($\Delta R^2 = .16$, $p = .001$). However, Daaleman and Dobbs also found that, in addition to model two (health status), models three (social support) ($\Delta R^2 = .07$, $p < .01$) and four (spirituality) ($\Delta R^2 = .11$, $p < .01$) also significantly increased the variance of the overall model. In the final model, with no significant contribution to the explained variance in the overall model, Daaleman and Dobbs found that higher anxiety ($\beta = .03$, $p < .01$), lower physical functioning ($\beta = .02$, $p < .05$), and lower self-efficacy ($\beta = -.10$, $p < .001$) were significant predictors of higher fear of death. The present study found that higher anxiety in older adults was significantly associated with greater fear of death, compared to all other psychological or health variables in model two (Study Aim 2). Furthermore, in the final model, elders with a married marital status were found to have significantly greater fear of death ($\beta = .34$, $p < .05$) compared to those who identified as widowed.

Results from a stepwise regression examining these aforementioned predictor variables on the outcome of fear of death attitude converged with the finding that a married marital status was significantly associated with greater fear of death ($\beta = .23$, $p < .05$) compared to widowed older adults. The backward elimination method indicated that the spirituality subscale of life scheme was also a significant predictor of fear of death ($\beta = -.40$, $p < .001$) and accounted for 15.9% of the variance. This novel finding indicates that an individual's ability to create a spiritual life scheme has a significant medium effect size (Cohen, 1988) on lowering fear of death attitude, $R^2 = .16$, $p < .001$ (Study Aims 3, 4, and 5).

The hierarchical regression analysis for the outcome of approach acceptance of death attitude indicated that demographic characteristics in model one significantly accounted for

41.7% of the variance. Demographic variables in model one of the Daaleman and Dobbs (2010) study only accounted for 8.7% of the variance in approach acceptance, with age (β = -.02, p < .05) and gender (β = .53, p < .01) as significant predictors within this model. Compared with Daaleman and Dobbs, the present study also found female gender as a significant predictor of higher approach acceptance, but not age. Interestingly, with the addition of religious/ spiritual affiliation, a demographic variable not accounted for in the Daaleman and Dobbs study, it significantly added to the higher percentage of the variance in explaining approach acceptance within models one (β = -.31, p < .05) and three (β = -.31, p < .05). Specifically, older adults with Catholic faiths had significantly higher approach acceptance of death (Study Aim 2).

Results from the stepwise regression partially converges with the results from the present study's and Daaleman and Dobbs (2010) study's hierarchical regression analyses. The stepwise regression analysis indicated that strength of belief (β = .43, p < .001), marital status (β = -.23, p < .05), and religious/ spiritual affiliation (β = -.23, p < .05) were significant predictors of approach acceptance of death attitude. Similar to the previous analyses, Catholic elders were found to have significantly higher approach acceptance. However, gender was not found to be a significant predictor. In the final model of the stepwise regression, the intrinsic religiosity measure of strength of belief, marital status, and religious affiliation had a significantly large effect on approach acceptance of death attitude, R^2 = .32, p < .05. In other words, older adults who reported greater strength of belief, a widowed marital status, and a Catholic religious affiliation had significantly higher levels of approach acceptance of death attitude (Study Aims 3, 4, and 5).

Daaleman and Dobbs (2010) found that older age was predictive of lower approach acceptance (β = -.02, p < .01), and constructs of intrinsic religiosity [strength of belief (β = -.39,

$p < .001$) and closeness to God/ Higher Force ($\beta = -.60$, $p < .001$)] were also predictive of this outcome. The present study did not find these variables significantly related to approach acceptance in the final model of the hierarchical regression. However, the stepwise regression converged with the finding that greater strength of belief was significantly related to greater approach acceptance ($\beta = .46$, $p < .001$). The hierarchical and stepwise regression analyses did not find age as a significant predictor. Given the mixed findings in the literature about the relationship between age and death attitudes, the present study's results reiterate the difficulty to conclude any direct relationship age may have on death anxiety (Cicirelli, 1999; Conte et al., 1982; Drolet, 1990; Fortner & Neimeyer, 1999; Harrawood et al., 2008; Rasmussen & Brems, 1996; Russac et al., 2007) (Study Aims 2, 3, 4, and 5). However, a possible explanation for the divergent results may be an artifact of the older sample used in the present study compared to the Daaleman and Dobbs study.

Moreover, there have been inconsistent findings in the literature in terms of the relationship between social support and death attitudes (Azaiza & Ron, 2010; Bowling, et al., 2010; Cicirelli, 1999; Neimeyer, 1994; Neimeyer et al., 2004). Results from the present study did not indicate that perceived social support was predictive of death attitudes. The extent to which institutionalization played a role in the potential effect of social support on death attitudes is unknown. It should be noted that the present study's participants had significantly lower interactive, dependent, and affective social support compared to the Daaleman and Dobbs (2010) participants (see Table 6). However, based on the convergent results from Daaleman and Dobbs' community-dwelling sample and the present study's institutionalized sample, it may indicate that greater levels of affective, dependent, and interactive social support does not necessarily foster a more positive outlook on the afterlife or reduce fear of death (Study Aims 2 and 5).

Further exploration into the relationship between demographic characteristics and death attitudes revealed significant relationships between fear of death attitude and marital status and education level (Study Aim 5). Similarly, marital status was also found to be a significant predictor in the outcome of approach acceptance of death attitude. Gender, religious/ spiritual affiliation, and ethnicity were also found to have significant relationships with approach acceptance of death attitude. However, these demographic variables were not found to be significantly associated with fear of death.

Significant relationships were found for fear of death and approach acceptance of death attitudes and marital status in the hierarchical and stepwise regression analyses. Widowed older adults reported less fear of death and higher approach acceptance compared to those who were married. The significant relationship between marital status and fear of death converges with a previous study indicating that chronic pain patients (N = 1914, M = 41.7 years, SD = 9.39, range = 16-73 years) who were widowed (n = 113, 6%) reported less fear, anger, and frustration compared to those who were married (n = 1327, 69%), divorced (n = 349, 18%), and separated (n = 125, 7%) (Wade et al., 2013). However, this diverges from Daaleman and Dobbs' (2010) findings, as well as several other studies that have not found significant relationships between marital status and death attitudes (Cole, 1978; Kastenbaum, 2000; Matsui & Braun, 2009; Moreno et al., 2008; Neimeyer, 1994). As a result, additional regression analyses were conducted to further examine if there were any potential moderation between marital status and other demographic variables (i.e., age, gender, ethnicity, religious/ spiritual affiliation) on death attitudes (Study Aim 5). Results indicated a significant interaction between marital status and gender on the outcome of fear of death, but not on approach acceptance. Based on these results, it is difficult to conclude any direct relationships between marital status and death attitudes and

this in part, converges with the current findings in the literature. Many past demographic studies have had a cursory examination of the relationship between marital status and death anxiety and as such, it is unclear if the investigations into the relationship between marital status and death attitudes have been identified or if it is associated with broader social constructs (e.g., family system, exposure to death, gained resiliency, grief, bereavement, etc.) (Kastenbaum, 2000; Wade et al., 2013). Nonetheless, these results may suggest that older adults who have lost a spouse/ loved one (i.e., widowed) reflect a gained resilience due to the potential adaptation from their exposure to death and loss, which result in a more positive affect at the end of life.

In the ANOVA procedure when all other predictor variables were not controlled for (age, education, depression, anxiety, self-rated health, physical functioning, interactive, dependent, and affective social support, spirituality, and intrinsic religiosity), religious affiliation, gender, and ethnicity were found to be significant predictors. Women had significantly higher approach acceptance in comparison to men. Elders who identified themselves as Catholic also had significantly higher approach acceptance compared to those affiliated with the Buddhist faith. Interestingly, older adults who reported Protestant or other Christian religious affiliations were not found to be significantly different from Buddhists. These results suggest differences in religious beliefs and practices, even among Christian denominations. These variations in beliefs and practices may potentially be affecting death attitudes in independent ways. Specifically, the Catholic belief in purgatory and the possibility of an afterlife as a reward or punishment may potentially be influencing an individual's conception of life after death. This fundamental difference in those who practice Catholicism may serve as a protective factor, leading to a more positive affective reaction to death, in comparison to individuals who identify as Protestants or other Christians.

Additionally, elders who identified Japanese as their primary ethnicity had significantly lower approach acceptance than those who identified as Filipino or Others (African American or Hispanic). This finding was obtained from the ANOVA procedure that did not control for other predictors variables or covariates. However, when the aforementioned covariates were controlled for in an ANOVA, the demographic characteristics of marital status, ethnicity, gender, and religious/ spiritual affiliation, were not found to have significant effects on death attitudes (Study Aim 5).

Findings from the present study have important theoretical and practical implications in numerous fields of study and practice (i.e., psychology, social work, nursing, medicine, hospice/ palliative care, gerontology, and oncology). Results provided a better understanding of what factors were correlated and predictive of the outcomes of fear of death and approach acceptance of death attitudes in chronically ill, institutionalized, and ethnically diverse older adults, particularly Asian and Hawai‘ian or Pacific Island elders. Results from correlational and regression analyses provided some support for previous findings that poorer perceived mental health is predictive of fear of death (Fortner & Neimeyer, 1999; Lockhart et al., 2001; Moreno et al., 2008; Stromberg & Jaarsma, 2008) (Study Aim 5). As such, practitioners are encouraged to screen for psychological distress, specifically anxiety in chronically ill older adults, as it may prove to be advantageous in reducing the fear associated with the end of life.

The finding that ethnicity was a significant predictor of fear of death and approach acceptance should be highlighted, because it suggests that examining cultural factors are integral to understanding death attitudes, particularly within multi-ethnic populations (Study Aim 5). These empirical findings also lend support for the theoretical notion that culture and ethnicity play integral roles in shaping an individual’s death attitudes (Cicirelli, 2002; Tomer, 2000).

Previous research has found conflicting findings, some of which have shown greater death anxiety in ethnic minorities, while others have found lower death anxiety (Bowling et al., 2010; Cicirelli, 1999; Matsui & Braun, 2009; Tang et al., 2011; Wu, Tang, & Kwok, 2002). This study provides strong evidence that there are differences in death attitudes, even within Asian and Pacific Islander ethnicities. In addition, these results provide converging evidence that Japanese Americans are more likely to experience lower approach acceptance of death attitudes, compared to not only Whites/ Caucasians and other ethnic minority groups, but also among individuals from other Asian cultures and backgrounds (Matsui & Braun, 2009). Specifically, results from the present study indicate individuals who identify as Filipino have significantly higher approach acceptance compared to Japanese elders, which may suggest Filipinos view death as an inevitable part of life and take on a more realistic and positive approach to the inevitability of death. This notion converges with previous research indicating Filipino elders tend to handle life challenges through proactive coping strategies and approach inescapable life stressors in a more manageable manner (de Guzman et al., 2009; Ficksenbaum, Greenglass, & Eaton, 2006). This also has particular importance for practitioners working with the elderly to aid in the assessment and treatment of death anxiety.

The significant relationships between spirituality and fear of death, as well as intrinsic religiosity and approach acceptance undoubtedly have practical implications within the fields of palliative and hospice care (Study Aims 3 and 4). Clinical techniques to assess levels of spirituality and intrinsic religiosity in order to promote inner strength and belief in oneself and providing tools to enhance an individual's ability to find meaning in one's own life are some of the content and skills providers can employ in order to reduce death anxiety in older adults who are chronically ill and/ or at the end of life.

In recent years, empirical research has emerged to provide efficacy for cognitive therapy (CT) and cognitive-behavior therapy (CBT) in the treatment of late-life generalized anxiety disorders (Barrowclough et al., 2001; Mohlman et al., 2003; Stanley, Beck, & Glasco, 1996; Stanley et al., 2003; Stanley et al., 2009; Wetherell, Gatz, & Craske, 2003; Wetherell et al., 2005). However, psychotherapeutic treatments have yet to integrate the important components of spirituality and intrinsic religiosity in its treatment of death anxiety. Treatment research within this area has also followed suit, and has failed to make significant strides in examining the efficacy of these components within treatment modalities, even though there is mounting support from empirical research studies. Innovative treatment protocols combining CT and CBT with elements of spirituality have been shown to be effective in individuals with psychological and personality disorders (Hoge, 2006), but have not been evaluated by also measuring and targeting death anxiety. Spiritually modified-CT and -CBT, as well as the Calmer Life Protocol from the National Institute of Mental Health (NIMH; Shrestha et al., 2012) have provided frameworks and manualized treatment protocols that tailor effective elements of these psychotherapeutic modalities with individuals' specific spiritual and religious needs and preferences. For example, efficacious CBT components, such as progressive muscle relaxation includes encouragement of patients to focus on spiritual images or words that bring peace and a calming effect, and cognitive restructuring incorporates statements to remind the patient that he/she can depend on something greater (God/ Higher Force) to help cope with worrisome situations. In addition, practitioners can help patients manage negative cognitions by incorporating meditation or prayer, and address sleep hygiene issues by embracing elements of prayer, meditation, spiritual reading, or imagery. Based on results from the present study, practitioners and researchers are encouraged to investigate the effects of employing these techniques to promote greater spirituality and

intrinsic religiosity within pre-existing therapeutic interventions/ manuals for the treatment of death anxiety.

Based on the present study's sample of multi-ethnic, institutionalized, and chronically ill older adults, results have indicated that older adults who identify as Japanese, Buddhist, married, or male, are at a significantly higher risk of being unable to accept the inevitability of death and are more likely to have difficulty pursuing meaning in one's life and death. Lower levels of approach acceptance has been found to be associated with less autonomy regarding end-of-life decision making and predictive of lower quality of life (Daaleman et al., 2002; Matsui & Braun, 2009). As such, it is essential that practitioners identify and target these individuals in order to better serve their needs by properly addressing any issues related to death anxiety and thereby, improving their quality of life and the lives of those around them.

SUMMARY OF FINDINGS

To address Study Aim 1 (partial replication of research results from Daaleman and Dobbs (2010)), descriptive statistics from the present study's 69 institutionalized sample indicated participants were older in age, had lower education level, were predominately widowed, and were primarily of Asian and Hawai‘ian or Pacific Islander ethnicities, compared to the 257 community-dwelling participants from the Daaleman and Dobbs study. In Daaleman and Dobbs' study, participants were largely married and Caucasian.

To address Study Aim 2 (potential differences between the present study and Daaleman and Dobbs' (2010) study in self-reported levels of death anxiety and hypothesized predictor variables measuring self-rated health status, perceived social support, spirituality, and intrinsic religiosity), independent sample t-tests indicated significant differences between the two groups. Specifically, the participants from the present study reported significantly greater fear of death,

poorer physical functioning and self-rated health, lower levels of interactive, dependent, and affective social support, lower depression and anxiety, and greater life scheme compared to the Daaleman and Dobbs study. Results from the hierarchical regression analysis, with models partially replicated from the Daaleman and Dobbs study, indicated poorer psychological and physical health characteristics (depression, anxiety, self-rated health status, and physical functioning) and lower education level were significantly associated with greater fear of death, similar to the findings from Daaleman and Dobbs' study. In contrast to the results from Daaleman and Dobbs, the present study found widowed older adults had significantly lower fear of death compared to married individuals. The hierarchical regression for approach acceptance for the present study indicated female gender and Catholic faiths were significantly associated with higher approach acceptance of death attitude, whereas, Daaleman and Dobbs found that males had higher approach acceptance.

Results addressing Study Aim 3 (determination of whether self-constructs related to spirituality (self-efficacy and life scheme) were related to self-reported death attitudes (fear of death and approach acceptance) indicated that higher levels of self-efficacy and life scheme were significantly correlated to lower fear of death. Stepwise regression analysis also supported this finding, as life scheme had a significant medium effect size (Cohen, 1988) on lowering fear of death attitude.

Results addressing Study Aim 4 (determination of whether self-constructs of intrinsic religiosity (strength of belief and closeness to God/ Higher Force) were related to self-reported death attitudes (fear of death and approach acceptance), indicated higher approach acceptance of death attitude was significantly related greater intrinsic religiosity (strength of belief and

closeness to God/ Higher Force). Stepwise regression converged with the finding that greater strength of belief was significantly related to greater approach acceptance.

To address Study Aim 5 (investigation into the potential meaningful relationships between two constructs of death attitudes with demographic variables, self-rated health status, and perceived social support), regression analyses indicated that females, widowed, or Catholic elders had significantly more positive death attitudes (lower fear of death and higher approach acceptance). In contrast, older adults who were male, married, Buddhist, or Other religious/ spiritual affiliations (i.e., Unreported, Atheist, Agnostic, Spiritualist, or Muslim) had more maladaptive death attitudes (greater fear of death and lower approach acceptance). Results from bivariate correlations, as well as from a one-way ANOVA and post-hoc tests, when all other covariates and predictor variables (age, education, depression, anxiety, self-rated health, physical functioning, interactive, dependent, and affective social support, spirituality, and intrinsic religiosity) from the hierarchical regression analyses were not controlled for, indicated females, Filipinos, African Americans, Hispanics, and Catholics had a significantly more positive outlook on death (higher approach acceptance). Whereas, older adults who identified as male, Buddhist, or Japanese had significantly lower approach acceptance of death attitude. No significant relationships were found between fear of death attitude and gender and ethnicity.

LIMITATIONS

One limitation of the present study pertains to the strengths and weaknesses of the measures used. Results from the present study also lend evidence to the basic psychometric properties of the MOS SF-36, GDS, SAS, Duke-UNC Affective Social Support Scale, DAP-R Fear of death and Approach acceptance subscales, and the SIWB Self-efficacy and Life scheme subscales. Estimates of internal consistency mounted support for the reliability of these

measures, and were consistent with previous studies examining its psychometrics (Broadhead et al., 1988; Erikson et al., 1995; Frey et al., 2005; Montorio & Izal, 1996; Wong et al., 1994; Zung, 1971). Low Cronbach's alphas were found for the Social Dependence and Social Interaction subscales of the OARS and the two items measuring intrinsic religiosity. These results were consistent with the lack of validity tests for these subtests on the OARS and the measure of intrinsic religiosity (Daaleman & Dobbs, 2010; Fillenbaum & Smyder, 1981), as weak reliability precludes strong validity estimates. Additionally, based on participant feedback and the present results, questionnaires examining death attitudes, particularly the construct of approach acceptance, may benefit from culturally and religious/ spiritually-sensitive language in order to minimize potential misinterpretation of the items and to provide more reliable and valid results.

Although the results of the present study lend psychometric evidence for the majority of the measures, there were a few limitations based on the lack of reliability support in the Social Dependence and Social Interaction subscales of the OARS and the two items measuring intrinsic religiosity. As such, interpretation of the results using these measures should be made with discretion. Specifically, the finding that perceived social support was not significantly related to either fear of death or approach acceptance of death attitudes may have been a product of measurement error. In addition, the two items measuring intrinsic religiosity yielded low internal consistency, either due to the artifact of two items yielding low estimates or due to measurement error (error potentially related to low content validity). As such, discussions made from results of these items are unclear, owing to limitations imposed by how the variables were measured, possible measurement error, or possible low content validity. Therefore, it is recommended that future studies that include these multi-dimensional constructs measure them with multiple items.

Moreover, all self-reported instruments administered in the Daaleman and Dobbs (2010) study were also verbally administered to the archived sample of participants from the study previously conducted by the author. This alteration in test format to an interview, conducted similarly in the Daaleman and Dobbs study, may have had potentially unknown effects on estimates of reliability and validity of the self-report questionnaires.

A second limitation is that findings from the present study may not be entirely generalizable to other populations, as the archived sample in this study only included institutionalized, chronically ill, older adults, and were primarily comprised of elders who identified as Asian, Hawai‘ian, or Pacific Islander, and the demographic make-up of the study participants is not fully representative of the total U.S. population. Additionally, the differences found between the results of the present study and the Daaleman and Dobbs (2010) study (majority White/ Caucasian), may have been an artifact of the differences in demographic characteristics within the participant samples, which may have potentially influenced any tested relationships between variables. The archived data set was a convenience sample and not matched to the Daaleman and Dobbs study, in terms of age, gender, marital status, or education of the participants.

A third important limitation to the present study is that it examined a specific set of correlational and predictor variables, and there are likely other variables that can potentially influence the outcome of death attitudes in older adults. Each variable included in this study measured a specific domain within its construct. Further examination into different variables and varying definitions of variables that are multidimensional in nature is recommended, in order to better understand the relationship between religiosity, spirituality, and death attitudes within the geriatric population. For example, religiosity may be further explored to include measures of

extrinsic religiosity (e.g., religious services attendance, observation of religious rules, etc.) and may be compared to measures of intrinsic religiosity. Also, based on the present study's results indicating a difference between Catholic and other Christian religious affiliations, it is recommended that future studies further investigate the specific religious attitudes inherent in different religious beliefs and practices. This exploration may lead to more detailed information on what specific religious factors or elements enable individuals from Catholic faiths to have a more positive affective approach to death.

Additionally, the constructs of self-efficacy and life scheme were used in the present study to measure spirituality, however, theological, sociological, philosophical, and psychological manifestations of spirituality may also be used to further investigate its effect on death attitudes (e.g., awareness of relationships with all creation, pursuit of spiritual wisdom, belief or experience with metaphysics, etc.). Moreover, the Death Attitude Profile-Revised (DAP-R; Wong et al., 1994) included three additional subscales to measure death attitudes, not included in the present study, neutral acceptance (neutral perspective about death, neither fearful nor welcomed), escape acceptance (viewing death as an escape from a painful existence), and death avoidance (avoidance of thoughts about death). Future studies may include these additional dimensions to measure death attitudes, as well as other constructs related to death attitudes (e.g., fear of the known or unknown, fear of a painful death, etc.). Furthermore, additional predictor variables, such as an individual's experience with death or exposure to death, factors related to bereavement, socioeconomic status, personality characteristics, such as openness to new experiences, or sense of self-mortality may be included for investigation in future empirical studies.

In summary, given the significant relationships found between self-reported variables and death attitudes, efforts focused on studying the relationship between death attitudes and spirituality and religiosity, as well as implementing therapeutic interventions will continue to be a worthwhile endeavor. Based on the empirical findings, ethnicity and religious/ spiritual beliefs appear to be noteworthy factors to examine when conducting research on death attitudes, spirituality, and religiosity, and have immense application within multiple fields: psychology, social work, nursing, medicine, hospice/ palliative care, gerontology, and oncology. Further investigation and exploration into the role of cultural beliefs will also undoubtedly be valuable in gaining a better understanding of factors related to death attitudes in ethnic minorities. Additionally, application of these findings will indeed be beneficial for practitioners and to the individuals, families, and communities they serve.

Table 1. *Demographic Characteristics: Present Study (From Archival Data) vs. Daaleman & Dobbs (2010) Study*

Characteristic	Present Study *N* = 69 *n* (%)	Daaleman & Dobbs (2010) *N* = 257 *n* (%)
Age (years)		
M (*SD*)	79.65 (8.8)	72.1 (10.1)
Range	65–97	*Not Available*
Gender		
Male	28 (40.6)	93 (36.2)
Female	41 (59.4)	164 (63.8)
Marital Status		
Married	19 (27.5)	131 (51.0)
Widowed	35 (50.7)	81 (31.5)
Single/ Separated/ Divorced	15 (21.7)	44 (17.2)
Ethnicity		
Caucasian	7 (10.1)	176 (68.4)
African American	*incl. in Other*	65 (25.3)
Japanese	26 (37.7)	
Hawai‘ian or Pacific Islander	10 (14.5)	
Chinese	10 (14.5)	
Filipino	9 (13.0)	
Other	7 (10.1)	7 (2.7)
Education Level		
Less than high school	9 (13.0)	66 (27.4)
High school degree or GED	31 (44.9)	81 (33.6)
Some college or higher	29 (42)	94 (39.0)
Religious Affiliation		
Catholic	23 (33.3)	
Protestant or Other Christian	17 (24.6)	
Buddhist	15 (21.7)	
Other	14 (20.3)	

Table 2. *Tests of Normality for All Present Study Measures*

Measures	Kolmogorov-Smirnov Statistic	*df*
Fear of Death (DAP-R)	.10	67
Approach Acceptance (DAP-R)	.12*	67
The Years of Healthy Life Scale (YOHL)	.22***	67
Total Physical Functioning Index (PFI, SF-36)	.23***	67
Geriatric Depression Scale (GDS)	.12*	67
Zung Self-Rating Anxiety Scale (SAS)	.17***	67
Affective social support (Duke-UNC)	.35***	67
Interactive social support (OARS)	.11*	67
Dependent social support (OARS)	.53****	67
Self-efficacy (SIWB)	.13**	67
Life Scheme (SIWB)	.10	67
Strength of belief	.38***	67
Closeness to God	.40***	67

*$p < .05$, **$p < .01$, ***$p < .001$

Table 3. *Collinearity Statistics for Hierarchical Regression Analysis of Fear of Death*

	Model 1		Model 2		Model 3		Model 4		Model 5	
Characteristic	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**
Age	.83	1.21	.76	1.32	.69	1.45	.66	1.51	.59	1.71
Marital Status	.93	1.07	.89	1.12	.76	1.31	.76	1.32	.68	1.48
Gender	.92	1.08	.92	1.09	.82	1.23	.81	1.23	.70	1.42
Education	.88	1.14	.85	1.17	.79	1.27	.70	1.43	.70	1.44
Ethnicity	.92	1.09	.87	1.15	.83	1.21	.82	1.23	.81	1.23
Religious Affiliation	.97	1.03	.95	1.05	.87	1.15	.87	1.15	.81	1.24
Depression			.57	1.74	.55	1.82	.52	1.93	.44	2.26
Anxiety			.61	1.64	.58	1.74	.52	1.92	.50	2.01
Self-rated health			.90	1.12	.87	1.15	.85	1.17	.84	1.19
Physical functioning			.77	1.30	.76	1.31	.76	1.32	.70	1.42
Interactive social support					.66	1.52	.65	1.54	.62	1.61
Dependent social support					.74	1.35	.74	1.36	.69	1.44
Affective social support					.73	1.38	.67	1.49	.65	1.54
Self-efficacy							.48	2.10	.47	2.13
Life scheme							.41	2.42	.41	2.45
Strength of belief									.59	1.70
Closeness to God/ Higher Force									.48	2.07

Table 4. *Collinearity Statistics for Hierarchical Regression Analysis of Approach Acceptance*

	Model 1		Model 2		Model 3		Model 4		Model 5	
Characteristic	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**
Age	.86	1.17	.78	1.28	.71	1.41	.68	1.47	.59	1.70
Marital Status	.94	1.07	.89	1.13	.75	1.34	.75	1.34	.67	1.49
Gender	.92	1.09	.91	1.09	.82	1.23	.81	1.23	.70	1.44
Education	.88	1.14	.85	1.18	.79	1.27	.69	1.44	.69	1.44
Ethnicity	.94	1.06	.85	1.17	.82	1.22	.80	1.25	.79	1.27
Religious Affiliation	.98	1.02	.96	1.05	.88	1.14	.87	1.15	.76	1.32
Depression			.57	1.76	.55	1.83	.51	1.96	.43	2.34
Anxiety			.59	1.70	.56	1.78	.51	1.97	.49	2.05
Self-rated health			.89	1.12	.87	1.14	.86	1.17	.83	1.20
Physical functioning			.79	1.27	.78	1.28	.78	1.29	.71	1.40
Interactive social support					.66	1.50	.65	1.53	.63	1.58
Dependent social support					.73	1.37	.72	1.39	.68	1.46
Affective social support					.73	1.37	.67	1.48	.65	1.53
Self-efficacy							.47	2.11	.47	2.13
Life scheme							.41	2.45	.40	2.48
Strength of belief									.57	1.76
Closeness to God/ Higher Force									.48	2.07

Table 5. *Internal Consistency Reliabilities of All Present Study Measures and its Individual Items*

Fear of Death			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
DAP-R	.87		
Q1	(.87)	4.87	2.05
Q2	(.86)	4.12	2.23
Q3	(.85)	3.14	2.11
Q4	(.84)	3.12	2.15
Q5	(.84)	3.01	2.03
Q6	(.86)	3.28	2.06
Q7	(.84)	2.99	2.03

Approach Acceptance			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
DAP-R	.89		
Q1	(.88)	5.22	1.89
Q2	(.87)	5.13	1.77
Q3	(.88)	5.77	1.51
Q4	(.88)	5.68	1.67
Q5	(.87)	5.43	1.74
Q6	(.88)	5.71	1.75
Q7	(.87)	5.49	1.69
Q8	(.88)	5.28	1.76
Q9	(.88)	5.51	1.72

Geriatric Depression Scale			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
GDS	.82		
Q1	(.81)	.25	.43
Q2	(.83)	.49	.50
Q3	(.81)	.28	.45
Q4	(.80)	.48	.50
Q5	(.82)	.12	.32
Q6	(.82)	.14	.36
Q7	(.81)	.19	.39
Q8	(.81)	.57	.50
Q9	(.84)	.48	.50
Q10	(.82)	.33	.48
Q11	(.82)	.13	.34
Q12	(.80)	.46	.50
Q13	(.81)	.52	.50
Q14	(.81)	.30	.46
Q15	(.80)	.48	.50

Total Physical Functioning Index			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
PFI, SF-36	.93		
Q1	(.94)	3.22	1.07
Q2	(.92)	3.74	1.81
Q3	(.92)	4.22	2.20
Q4	(.92)	4.04	2.05
Q5	(.92)	4.78	2.59
Q6	(.93)	5.09	2.59
Q7	(.93)	3.83	1.99
Q8	(.92)	4.48	2.34
Q9	(.92)	5.00	2.56
Q10	(.93)	5.74	2.56

Table 5. (Continued) *Internal Consistency Reliabilities of All Present Study Measures and its Individual Items*

Zung Self-Rating Anxiety Scale			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
SAS	.76		
Q1	(.71)	1.76	1.12
Q2	(.74)	1.34	.75
Q3	(.73)	1.59	.92
Q4	(.73)	1.51	.94
Q5	(.74)	2.28	1.13
Q6	(.75)	1.72	1.01
Q7	(.75)	1.71	1.04
Q8	(.73)	1.96	1.09
Q9	(.76)	2.10	1.11
Q10	(.74)	1.28	.64
Q11	(.75)	1.10	.43
Q12	(.76)	1.03	.17
Q13	(.76)	1.21	.66
Q14	(.74)	1.68	.98
Q15	(.74)	1.31	.61
Q16	(.75)	2.22	1.22
Q17	(.79)	2.41	1.20
Q18	(.75)	1.19	.55
Q19	(.76)	2.35	1.27
Q20	(.75)	1.22	.48

Intrinsic Religiosity			
Measures	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
Intrinsic Religiosity	.69		

Self-Efficacy			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
SIWB	.84		
Q1	(.83)	3.12	1.46
Q2	(.82)	3.72	1.28
Q3	(.81)	3.85	1.24
Q4	(.83)	3.41	1.32
Q5	(.78)	3.75	1.20
Q6	(.80)	3.24	1.45

Life Scheme			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
SIWB	.82		
Q1	(.83)	3.66	1.27
Q2	(.80)	4.35	.89
Q3	(.77)	3.84	1.27
Q4	(.75)	3.82	1.28
Q5	(.75)	3.87	1.25
Q6	(.82)	3.60	1.26

Table 5. (Continued) *Internal Consistency Reliabilities of All Present Study Measures and its Individual Items*

Interactive Social Support			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
OARS	.37		
Q1	(.40)	1.54	1.23
Q2	(.09)	1.57	1.19
Q4	(.32)	1.75	1.00

Affective Social Support			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
Duke-UNC	.70		
Q1	(.46)	4.35	1.17
Q2	(.36)	4.31	1.27
Q3	(.81)	4.75	.66

Dependent Social Support			
Measure & Items	Cronbach's Alpha (If Item Deleted)	*M*	*SD*
OARS	.66		

Table 6. *Descriptive Statistics of Predictor Variables and Death Attitudes: Present Study vs. Daaleman & Dobbs (2010) Study*

Characteristic	Range[a]	Present Study *N* = 69 *M* (*SD*)	Daaleman & Dobbs *N* = 257 *M* (*SD*)	*t*	*df*[b]
Depression (GDS)	0-15	5.2 (3.7)	6.3 (1.5)	2.40*	74
Anxiety (SAS)	20-80	33.0 (7.7)	43.7 (9.6)	9.71***	130
Self-rated health (YOHL)	1-5	3.8 (1.0)			
Fair or *poor* self-rated health: *n* (*%*)		39 (56.5%)	115 (44.7%)		
Physical functioning (PFI, SF-36)	33.3-100	49.0 (19.4)	55.9 (18.0)	2.66**	102
Social Support					
Interactive (OARS)	0-9	4.8 (2.3)	7.4 (1.5)	8.86***	84
Dependent (OARS)	0-2	1.9 (.4)	2.0 (.2)	2.39*	77
Affective (Duke UNC)	1-18	4.6 (2.5)	16.5 (3.0)	33.47***	125
Spirituality (SIWB)					
Life scheme	6-30	23.2 (5.2)	21.3 (4.2)	-2.69**	91
Self-efficacy	6-30	21.1 (5.9)	22.2 (4.1)	1.45	85
Intrinsic Religiosity					
Strength of belief	1-4	3.4 (.9)			
Strong or *somewhat* strongly religious/spiritual: *n* (*%*)		57 (82.6%)	224 (87.8%)		
Closeness to God/ Higher Force	1-4	3.5 (.8)			
Extremely close to God/ Higher Force: *n* (*%*)		45 (65.2%)	154 (60.0%)		
Death attitudes (DAP-R)					
Fear of death	1-7	3.5 (1.6)	2.9 (1.2)	-3.11**	90
Approach acceptance	1-7	5.4 (1.2)	5.6 (1.1)	1.16	97

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Higher GDS scores indicate greater levels of depression; Higher SAS scores indicate greater levels of anxiety; Higher PFI, SF-36 scores indicate greater impairment in physical functioning; Higher OARS and Duke-UNC scores indicate greater levels of social support (interactive, dependent, affective); Higher SIWB scores indicate greater spirituality (life scheme and self-efficacy); Higher intrinsic religiosity scores indicate greater strength of belief and greater closeness to God/Higher Force; Higher DAP-R scores indicate greater fear of death and approach acceptance of death attitudes

[b] Unequal variances assumed. df values rounded to nearest integer.

Table 7. *Hierarchical Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Fear of Death Attitude*

Characteristic	Model 1, β (*SE*)	Model 2, β (*SE*)	Model 3, β (*SE*)	Model 4, β (*SE*)	Model 5, β (*SE*)
Demographics					
Age	-.01 (.03)	-.05 (.03)	.10 (.03)	.06 (.03)	.05 (.03)
Marital Status					
Married v. Widowed	.26 (.55)	.24 (.51)	.33* (.55)	.33* (.56)	.34* (.57)
Single v. Widowed	.09 (.60)	-.05 (.56)	.05 (.60)	.04 (.61)	.04 (.63)
Gender[a]	-.02 (.47)	-.05 (.43)	-.04 (.46)	-.03 (.46)	-.01 (.49)
Education	-.29* (.15)	-.26 (.14)	-.33* (.16)	-.27 (.17)	-.26 (.18)
Ethnicity					
Caucasian v. Japanese	.07 (.89)	.14 (.82)	.12 (.83)	.11 (.83)	.12 (.85)
Other v. Japanese	.16 (.76)	.24 (.70)	.27 (.70)	.24 (.70)	.26 (.74)
Chinese v. Japanese	-.06 (.64)	-.13 (.59)	-.12 (.60)	-.13 (.61)	-.15 (.65)
Filipino v. Japanese	.05 (.82)	.02 (.74)	-.06 (.78)	-.12 (.80)	-.11 (.82)
Hawai‘ian or Pacific Islander v. Japanese	.01 (.77)	-.04 (.75)	-.04 (.76)	-.04 (.78)	-.04 (.79)
Religious Affiliation					
Protestant or Other Christian v. Catholic	-.03 (.62)	.03 (.57)	-.02 (.57)	-.03 (.57)	-.03 (.59)
Buddhist v. Catholic	.08 (.71)	.04 (.66)	.03 (.68)	.00 (.68)	-.01 (.70)
Other v. Catholic	-.27 (.64)	-.19 (.60)	-.22 (.62)	-.23 (.62)	-.25 (.67)

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Note. Marital status was represented as two dummy variables with Widowed serving as the reference group. Ethnicity was represented as five dummy variables with Japanese serving as the reference group. Religious affiliation was represented as three dummy variables with Catholic serving as the reference group.

Table 7. (Continued) *Hierarchical Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Fear of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**	**Model 3, β (*SE*)**	**Model 4, β (*SE*)**	**Model 5, β (*SE*)**
Health Status					
Depression		.13 (.07)	.15 (.07)	.10 (.07)	.09 (.08)
Anxiety		.39** (.03)	.36* (.03)	.30 (.03)	.31 (.04)
Self-rated health		-.21 (.21)	-.16 (.22)	-.14 (.22)	-.15 (.23)
Physical functioning		.11 (.01)	.12 (.01)	.10 (.01)	.09 (.01)
Social Support					
Interactive			.18 (.11)	.19 (.11)	.19 (.11)
Dependent			.07 (.54)	.10 (.54)	.09 (.57)
Affective			.15 (.09)	.14 (.09)	.12 (.09)
Spirituality					
Self-efficacy				-.15 (.04)	-.14 (.04)
Life scheme				-.10 (.06)	-.10 (.06)
Intrinsic Religiosity					
Strength of belief					-.06 (.29)
Closeness to God/ Higher Force					-.02 (.32)
$\boldsymbol{R^2}$	.21	.41	.45	.47	.47
$\boldsymbol{\Delta R^2}$	.21	.19**	.04	.03	.00

*$p < .05$, **$p < .01$, ***$p < .001$

Table 8. *Hierarchical Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Approach Acceptance of Death Attitude*

Characteristic	Model 1, β (*SE*)	Model 2, β (*SE*)	Model 3, β (*SE*)	Model 4, β (*SE*)	Model 5, β (*SE*)
Demographics					
Age	-.26 (.02)	-.21 (.02)	-.19 (.02)	-.20 (.02)	-.12 (.02)
Marital Status					
Married v. Widowed	-.14 (.38)	-.15 (.39)	-.25 (.42)	-.26 (.43)	-.30 (.42)
Single v. Widowed	-.07 (.41)	-.13 (.42)	-.14 (.46)	-.16 (.47)	-.11 (.46)
Gender[a]	.26* (.32)	.25 (.32)	.21 (.35)	.20 (.35)	.10 (.36)
Education	-.02 (.10)	.03 (.11)	.02 (.12)	-.01 (.13)	-.02 (.13)
Ethnicity					
Caucasian v. Japanese	-.16 (.60)	-.14 (.62)	-.12 (.63)	-.12 (.64)	-.14 (.61)
Other v. Japanese	.15 (.52)	.18 (.53)	.19 (.53)	.20 (.54)	.13 (.54)
Chinese v. Japanese	-.09 (.43)	-.12 (.44)	-.18 (.46)	-.19 (.47)	-.09 (.48)
Filipino v. Japanese	.14 (.56)	.13 (.56)	.14 (.59)	.17 (.62)	.15 (.60)
Hawai‘ian or Pacific Islander v. Japanese	.01 (.53)	-.02 (.56)	.02 (.57)	-.01 (.60)	-.02 (.58)
Religious Affiliation					
Protestant or Other Christian v. Catholic	-.04 (.42)	-.01 (.43)	.00 (.44)	.00 (.44)	.03 (.43)
Buddhist v. Catholic	-.29 (.48)	-.33 (.50)	-.33 (.51)	-.33 (.52)	-.30 (.51)
Other v. Catholic	-.31* (.44)	-.26 (.45)	-.31* (.47)	-.31 (.48)	-.20 (.48)

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Note. Marital status was represented as two dummy variables with Widowed serving as the reference group. Ethnicity was represented as five dummy variables with Japanese serving as the reference group. Religious affiliation was represented as three dummy variables with Catholic serving as the reference group.

Table 8. (Continued) *Hierarchical Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Approach Acceptance of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**	**Model 3, β (*SE*)**	**Model 4, β (*SE*)**	**Model 5, β (*SE*)**
Health Status					
Depression		.11 (.05)	.11 (.05)	.10 (.05)	.21 (.05)
Anxiety		.09 (.02)	.13 (.02)	.17 (.03)	.08 (.03)
Self-rated health		-.12 (.16)	-.15 (.16)	-.17 (.17)	-.17 (.17)
Physical functioning		-.04 (.01)	-.01 (.01)	-.00 (.01)	.05 (.01)
Social Support					
Interactive			.09 (.08)	.09 (.08)	.09 (.08)
Dependent			-.23 (.41)	-.24 (.42)	-.22 (.41)
Affective			-.10 (.07)	-.08 (.07)	-.01 (.07)
Spirituality					
Self-efficacy				-.10 (.03)	-.14 (.03)
Life scheme				.16 (.04)	.17 (.04)
Intrinsic Religiosity					
Strength of belief					.18 (.21)
Closeness to God/ Higher Force					.23 (.23)
R^2	.42	.45	.49	.50	.56
ΔR^2	.42**	.04	.04	.01	.06

*$p < .05$, **$p < .01$, ***$p < .001$

Table 9. *Bivariate Correlations of Death Attitudes Scores, Demographic Characteristics, Health and Psychosocial Indices, and Religiosity and Spirituality Variables*

	1	**2**	**3**	**4**	**5**	**6**	**7**
	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**
1. Fear of Death							
2. Approach Acceptance	.04, -.03						
3. Age	.06, .08	-.23, -.18					
4. Gender[a]	-.04, -.03	.33**, .30*	.14, .14				
5. Education level	-.26*, -.28*	-.11, -.09	-.28*, -.27*	-.17, -.16			
6. Depression	.28*, .27*	.14, .10	.13, .10	.10, .08	-.01, -.04		
7. Anxiety	.33**, .23	.18, .14	-.05, -.07	.02, .07	.01, -.05	.57***, .52***	
8. Self-rated health	-.20, -.21	-.04, -.04	.12, .13	.03, .03	.02, .02	.07, .02	.10, .09
9. Physical functioning	-.06, -.05	-.13, -.16	.11, .13	-.02, .01	.08, .00	-.33**, -.36***	-.27*, -.24*
10. Interactive social support	-.07, -.06	.10, .09	-.34**, -.31*	.08, .05	.28*, .30*	-.22, -.22	-.14, -.18
11. Dependent social support	.06, .07	.03, .00	-.06, .00	.13, .07	.02, -.02	-.10, .00	-.02, .03
12. Affective social support	.21, .18	-.01, -.07	.01, .06	-.17, -.15	-.06, -.10	.21, .16	.30*, .28*
13. Self-efficacy	-.33**, -.32**	-.06, -.03	-.28*, -.23	-.01, -.03	.23, .28*	-.43***, -.44***	-.38***, -.42***
14. Life scheme	-.40***, -.41***	-.09, -.03	-.16, -.15	-.02, -.06	.34**, .37***	-.38**, -.36***	-.44***, -.45***
15. Strength of belief	.03, -.01	.46***, .40***	-.22, -.23	.27*, .27*	-.03, -.01	-.11, -.10	-.06, -.06
16. Close to God/Higher Force	.05, -.02	.38***, .28*	-.29*, -.25*	.20, .21	-.06, -.07	-.26*, -.26*	.03, .02

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Note. Pearson correlation (*r*), Spearman correlation (r_s)

Table 9. (Continued) *Bivariate Correlations of Death Attitudes Scores, Demographic Characteristics, Health and Psychosocial Indices, and Religiosity and Spirituality Variables*

	8	**9**	**10**	**11**	**12**	**13**	**14**	**15**
	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**	***r*, r_s**
1. Fear of Death								
2. Approach Acceptance								
3. Age								
4. Gender[a]								
5. Education level								
6. Depression								
7. Anxiety								
8. Self-rated health								
9. Physical functioning	-.25*, -.24*							
10. Interactive social support	-.03, -.04	.02, .03						
11. Dependent social support	-.11, -.13	.07, .07	.25*, .21					
12. Affective social support	-.08, -.17	-.00, .07	-.06, -.13	-.24, -.29*				
13. Self-efficacy	-.02, -.06	.11, .13	.34**, .33**	.18, .11	-.25*, -.42***			
14. Life scheme	.09, .06	.09, .12	.29*, .30*	.16, .10	-.41***, -.36***	.66***, .69***		
15. Strength of belief	-.05, -.05	-.11, -.13	.12, .12	.09, .07	-.27*, -.29*	.21, .25*	.11, .12	
16. Close to God/ Higher Force	.04, .09	-.19, -.14	.09, .09	.18, .20	-.23, -.20	.17, .18	.07, .09	.53***, .56***

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Note. Pearson correlation (*r*), Spearman correlation (r_s)

Table 10. *Stepwise Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Fear of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β *(SE)***
Spirituality		
Life scheme	-.40*** (.03)	-.47*** (.03)
Demographics		
Marital Status		
Married v. Widowed		.23* (.39)
R^2	.16	.21
ΔR^2	.16***	.05*

*$p < .05$, **$p < .01$, ***$p < .001$

Note. Marital status was represented as two dummy variables with Widowed serving as the reference group.

Table 11. *Stepwise Regression Analysis of the Association Between Demographic Characteristics, Health Status, Social Support, Spirituality, Religiosity, and the Outcome of Approach Acceptance of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β *(SE)***	**Model 3, β *(SE)***
Intrinsic Religiosity			
Strength of belief	.46*** (.15)	.47*** (.15)	.43*** (.14)
Demographics			
Marital Status			
Married v. Widowed		-.23* (.30)	-.23* (.29)
Religious Affiliation			
Buddhist v. Catholic			-.23* (.32)
R^2	.21	.27	.32
ΔR^2	.21***	.05*	.05*

*$p < .05$, **$p < .01$, ***$p < .001$

Note. Marital status was represented as two dummy variables with Widowed serving as the reference group. Religious affiliation was represented as three dummy variables with Catholic serving as the reference group.

Table 12. *Descriptive Statistics of Demographics by Fear of Death and Approach Acceptance*

	Fear of Death			Approach Acceptance		
Characteristic	***n***	***M***	***SD***	***n***	***M***	***SD***
Marital Status (Total)	69	3.50	1.57	69	5.42	1.24
Widowed	35	3.29	1.40	35	5.61	1.13
Married	19	3.92	1.55	19	5.00	1.34
Single	15	3.47	1.95	15	5.49	1.31
Religious Affiliation (Total)	69	3.50	1.57	69	5.42	1.24
Catholic	23	3.91	1.86	23	5.95	.87
Protestant or Other Christian	17	3.38	1.58	17	5.69	1.43
Buddhist	15	3.74	1.21	15	4.68	1.35
Other	14	2.72	1.17	14	4.99	.91
Gender (Total)	69	3.50	1.57	69	5.42	1.24
Female	41	3.46	1.52	41	5.75	.99
Male	28	3.57	1.67	28	4.93	1.41
Ethnicity (Total)	69	3.50	1.57	69	5.42	1.24
Japanese	26	3.58	1.51	26	5.14	1.24
Chinese	10	2.79	1.29	10	4.85	1.74
Hawai‘ian or Pacific Islander	10	2.90	1.33	10	5.76	1.23
Filipino	9	3.95	1.70	9	6.23	.69
Other (Hispanic or African American)	7	4.20	1.63	7	6.01	.59
Caucasian	7	3.82	2.09	7	5.10	.80

Table 13. *ANOVA for Fear of Death Attitude by Demographic Variables – Not Controlling for Covariates and Other Predictor Variables*

Characteristic	***df* numerator**	***df* denominator**	***F***	**Partial η^2**
Marital Status	2	66	.98	.03
Religious Affiliation	3	65	1.90	.08
Gender [a]	1	67	.09	.00
Ethnicity	5	63	.81	.06

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Table 14. *ANOVA for Approach Acceptance of Death Attitude by Demographic Variables – Not Controlling for Covariates and Other Predictor Variables*

Characteristic	***df* numerator**	***df* denominator**	***F***	**Partial ŋ^2**
Marital Status	2	66	1.55	.05
Religious Affiliation	3	65	4.66**	.18
Gender [a]	1	67	8.03**	.11
Ethnicity	5	63	2.39*	.16

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Table 15. *ANOVA for Fear of Death Attitude by Demographic Variables –Controlling for Covariates and Other Predictor Variables*

Characteristic	***df* numerator**	***df* denominator**	***F***	**Partial ŋ^2**
Marital Status	2	50	2.21	.08
Religious Affiliation	3	47	.71	.04
Gender [a]	1	52	1.07	.02
Ethnicity	5	47	1.07	.10

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Table 16. *ANOVA for Approach Acceptance of Death Attitude by Demographic Variables – Controlling for Covariates and Other Predictor Variables*

Characteristic	***df* numerator**	***df* denominator**	***F***	**Partial η^2**
Marital Status	2	50	1.17	.05
Religious Affiliation	3	47	1.44	.08
Gender [a]	1	52	2.08	.04
Ethnicity	5	47	1.28	.12

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Table 17. *Cross-Tabulation between Ethnicity and Religious Affiliation*

		Religious Affiliation							
		Christian, Protestant		Catholic		Buddhist		Other	
		n	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Ethnicity	Caucasian	1	14.3	5	71.4	0	0.0	1	14.3
	Japanese	8	30.8	3	11.5	13	50.0	2	7.7
	Other (Hispanic, AA)	1	14.3	3	42.9	0	0.0	3	42.9
	Chinese	4	40.0	1	10.0	2	20.0	3	30.0
	Filipino	1	11.1	8	88.9	0	0.0	0	0.0
	Hawai‘ian, Pacific Islander	2	20.0	3	30.0	0	0.0	5	50.0

Table 18. *Regression Analysis of the Association Between Ethnicity, Religious Affiliation, and Interaction Variable (Ethnicity x Religious Affiliation), and the Outcome of Fear of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**
Ethnicity		
Caucasian v. Japanese	.07 (.78)	.08 (.78)
Other v. Japanese	.13 (.72)	.06 (.78)
Chinese v. Japanese	-.11 (.61)	-.22 (.76)
Filipino v. Japanese	.07 (.76)	-.03 (.88)
Hawai‘ian or Pacific Islander v. Japanese	-.01 (.72)	-.21 (1.18)
Religious Affiliation		
Protestant or Other Christian v. Catholic	-.06 (.59)	-.14 (.66)
Buddhist v. Catholic	.05 (.70)	-.10 (.88)
Other v. Catholic	-.26 (.61)	-.53 (1.18)
Interaction Variable (Ethnicity x Religious Affiliation)		.36 (.09)
R^2	.12	.13
ΔR^2	.12	.02

*$p < .05$, **$p < .01$, ***$p < .001$

Note. Ethnicity was represented as five dummy variables with Japanese serving as the reference group. Religious affiliation was represented as three dummy variables with Catholic serving as the reference group.

Table 19. *Regression Analysis of the Association Between Ethnicity, Religious Affiliation, and Interaction Variable (Ethnicity x Religious Affiliation), and the Outcome of Approach Acceptance of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**
Ethnicity		
Caucasian v. Japanese	-.12 (.56)	-.13 (.56)
Other v. Japanese	.23 (.51)	.26 (.56)
Chinese v. Japanese	-.11 (.44)	-.06 (.55)
Filipino v. Japanese	.14 (.54)	.19 (.63)
Hawai‘ian or Pacific Islander v. Japanese	.08 (.52)	.18 (.85)
Religious Affiliation		
Protestant or Other Christian v. Catholic	-.01 (.42)	.03 (.47)
Buddhist v. Catholic	-.33 (.50)	-.26 (.63)
Other v. Catholic	-.31* (.44)	-.17 (.85)
Interaction Variable (Ethnicity x Religious Affiliation)		-.18 (.07)
R^2	.28	.28
ΔR^2	.28**	.00

*$p < .05$, **$p < .01$, ***$p < .001$

Note. Ethnicity was represented as five dummy variables with Japanese serving as the reference group. Religious affiliation was represented as three dummy variables with Catholic serving as the reference group.

Table 20. *Regression Analysis of the Association Between Marital Status, Gender, and Interaction Variable (Marital Status x Gender), and the Outcome of Fear of Death Attitude*

Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**
Marital Status		
Married v. Widowed	.21 (.52)	.32* (.52)
Single/Separated/Divorced v. Widowed	.06 (.51)	-.11 (.56)
Gender [a]	.06 (.45)	.83* (1.20)
Interaction Variable (Marital Status x Gender)		.36 (.09)
$\boldsymbol{R^2}$	.03	.12
$\boldsymbol{\Delta R^2}$	.03	.09*

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

Note. Marital status was represented as two dummy variables with Widowed serving as the reference group.

Table 21. *Regression Analysis of the Association Between Marital Status, Gender, and Interaction Variable (Marital Status x Gender), and the Outcome of Approach Acceptance of Death Attitude*

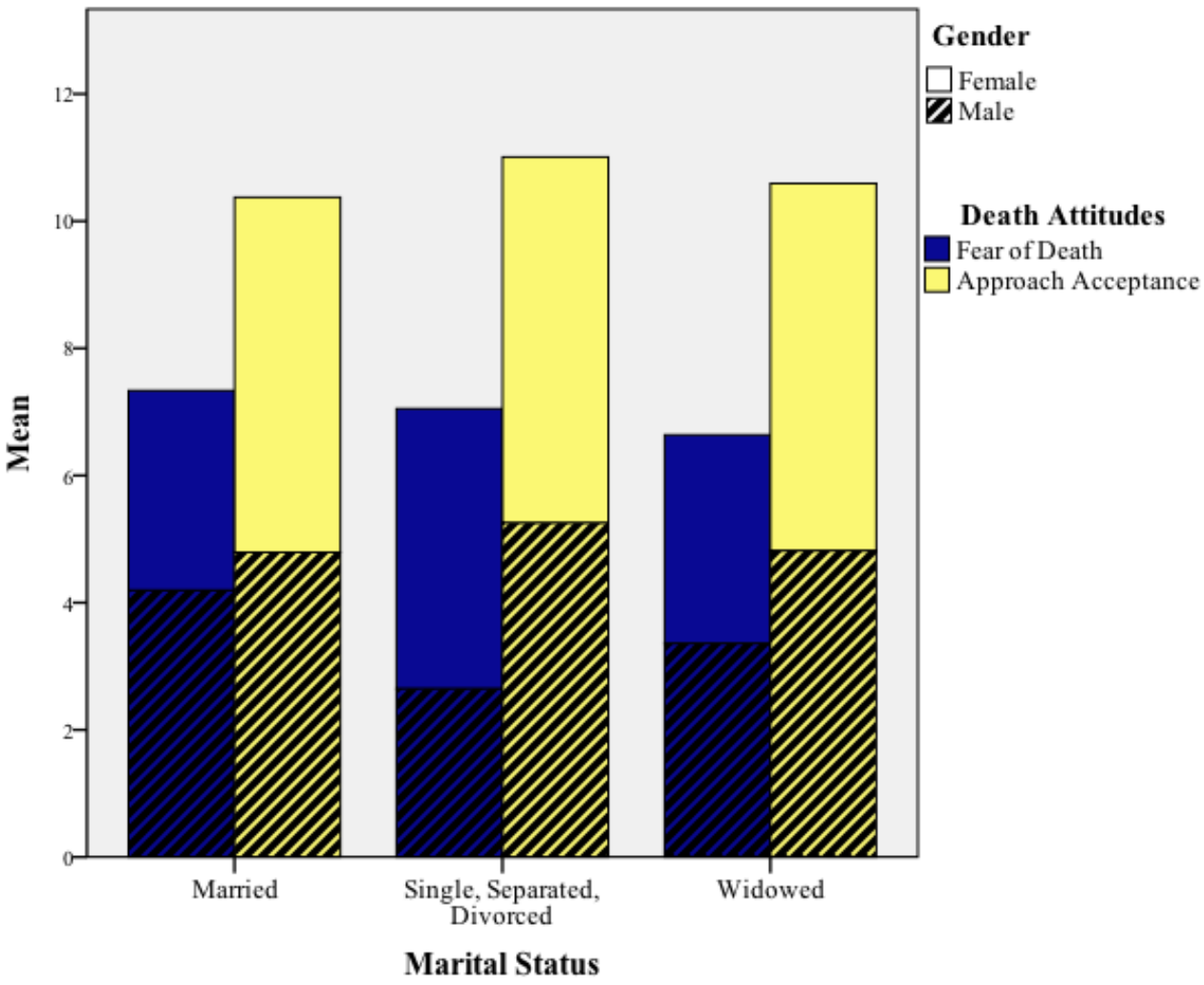
Characteristic	**Model 1, β (*SE*)**	**Model 2, β (*SE*)**
Marital Status		
Married v. Widowed	-.06 (.39)	-.08 (.41)
Single/Separated/Divorced v. Widowed	.05 (.39)	.07 (.44)
Gender [a]	.31* (.34)	.42 (.95)
Interaction Variable (Marital Status x Gender)		-.12 (.44)
$\boldsymbol{R^2}$	.12	.12
$\boldsymbol{\Delta R^2}$	.12*	.00

*$p < .05$, **$p < .01$, ***$p < .001$

[a] Gender coded as a binary variable (male = 0, female =1)

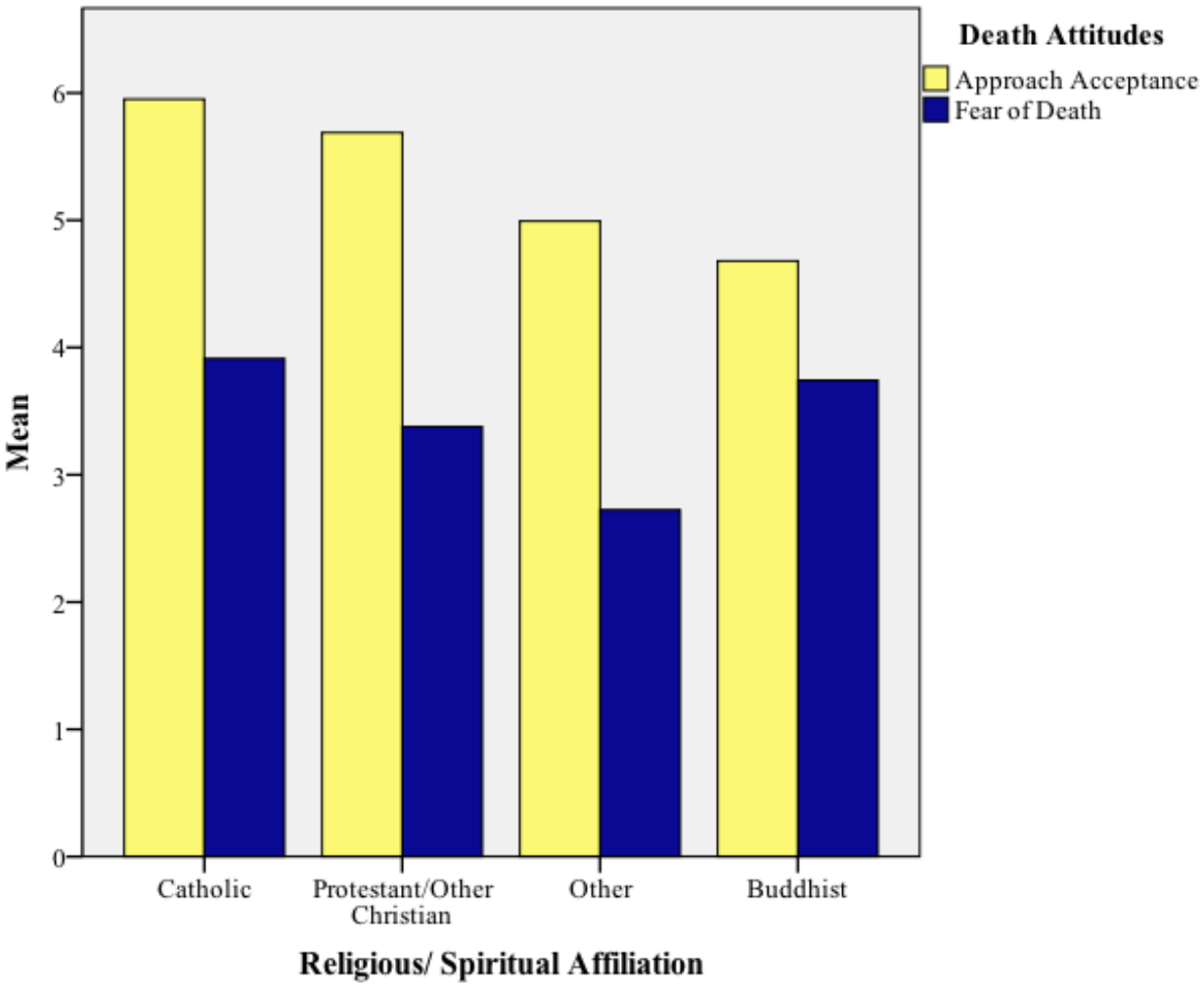
Note. Marital status was represented as two dummy variables with Widowed serving as the reference group.

Figure 1. *Death Attitudes by Marital Status and Gender*



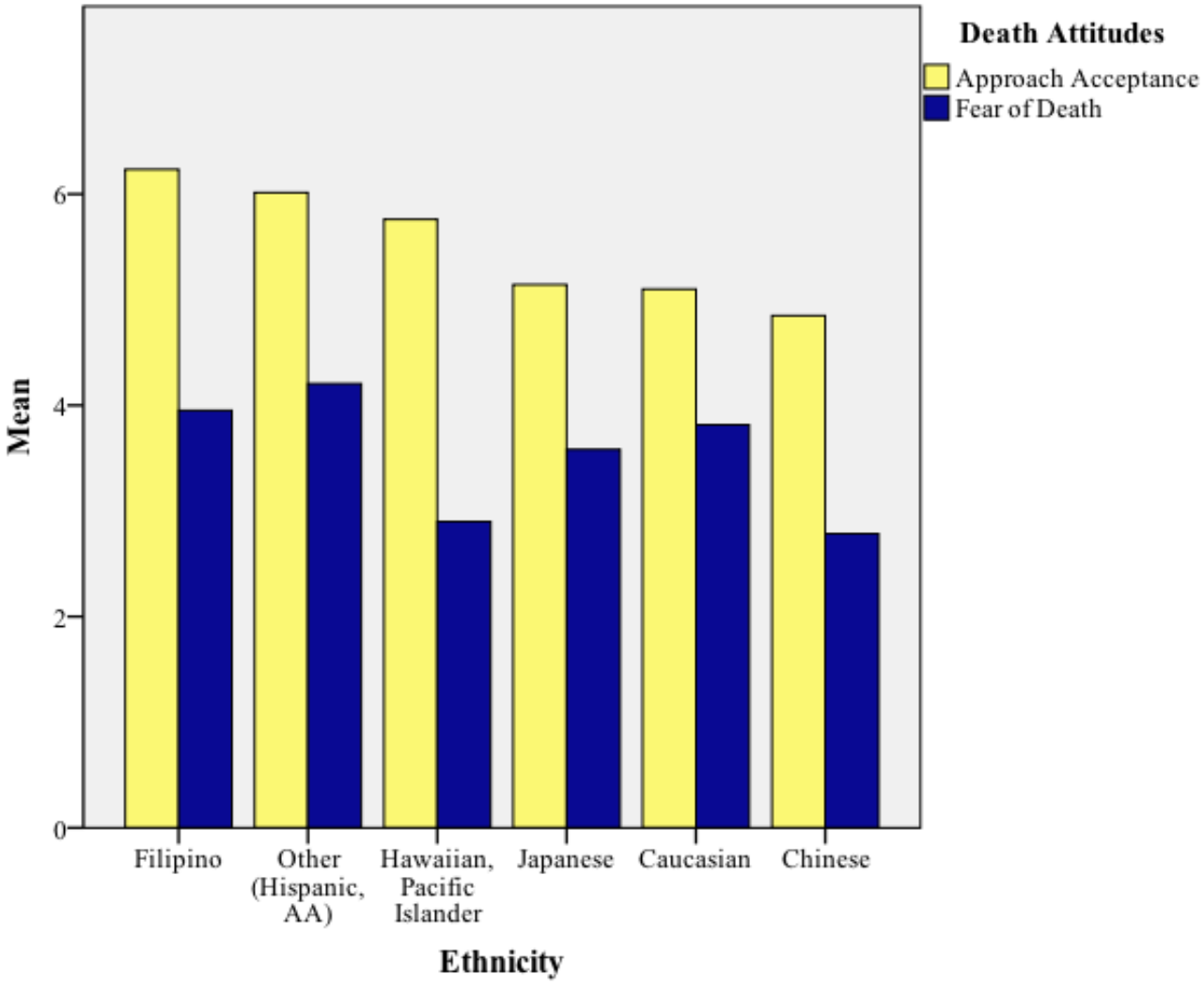
Note. Married males had significantly ($p < .05$) greater fear of death and lower approach acceptance compared to widowed females. There was a significant ($p < .05$) interaction between marital status and gender for the outcome of fear of death attitude.

Figure 2. *Death Attitudes by Religious/ Spiritual Affiliation*



Note. Older adults with a Catholic religious affiliation had significantly higher approach acceptance compared to Buddhists ($p < .01$) and Others (i.e., Unreported, Atheist, Agnostic, Spiritualist, or Muslim) ($p < .05$).

Figure 3. *Death Attitudes by Ethnicity*



Note. Older adults who reported a Japanese ethnicity had significantly ($p < .05$) lower approach acceptance compared to Filipino and Other ethnicities (African American or Hispanic).

Figure 4. *Cross-tabulation between Ethnicity and Religious/ Spiritual Affiliation*

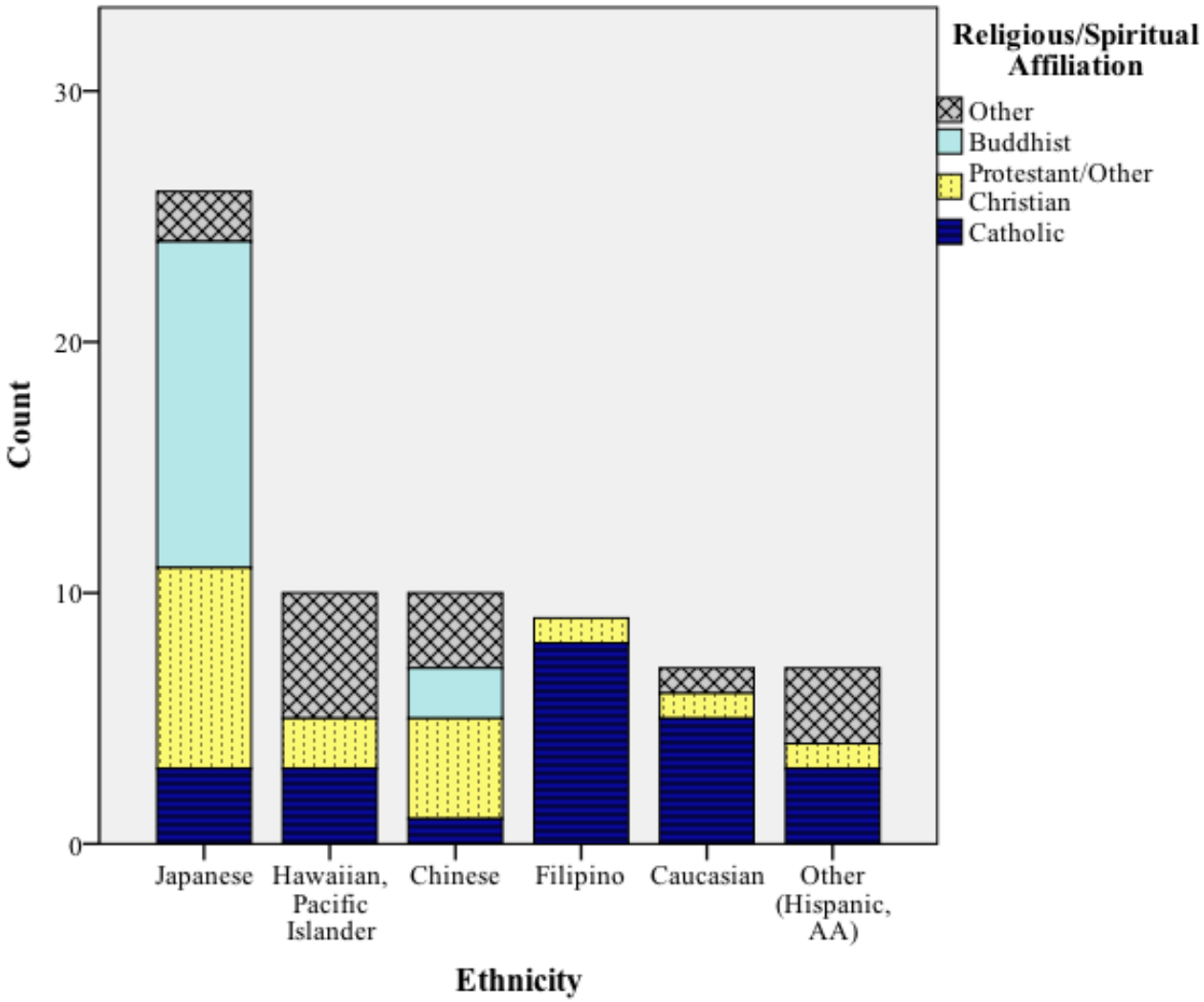
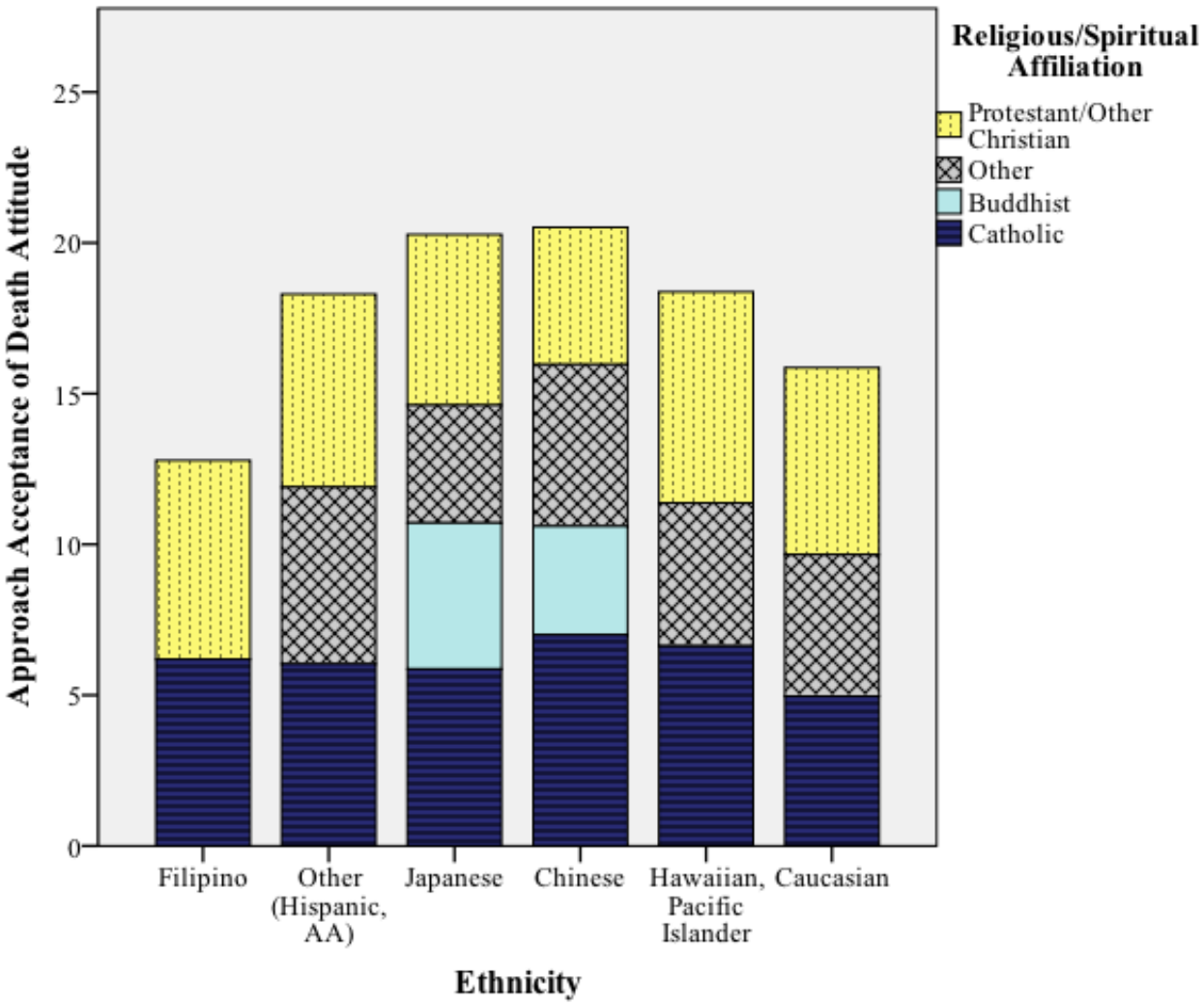


Figure 5. *Approach Acceptance of Death Attitude by Ethnicity and Religious/ Spiritual Affiliation*



Note. Ethnicity and religious/spiritual affiliation ($p < .01$) was significantly related to approach acceptance of death attitude. Japanese elders or those with Buddhist or Other religious/spiritual affiliations (i.e., Unreported, Agnostic, Atheist, Spiritualist, or Muslim) had lower approach acceptance compared to Filipino, African American, Hispanic, or Catholic older adults.

Appendix A: *Demographic Questionnaire*

Demographic Questionnaire

Directions**: I would like to ask you a few questions in regards to your demographics. All responses will be kept confidential.**

1. What is your age (in years)? _____

2. What is your sex (check one)? a) Male _____ b) Female_____ c) Other_____

3. What is the ethnic background with which you most identify?
    a. African American
    b. Caucasian
    c. Chinese
    d. Filipino
    e. Hawai‘ian or Part Hawai‘ian
    f. Japanese
    g. Korean
    h. Pacific Islander
    i. Portuguese
    j. Asian other than listed above (please specify)_____
    k. Hispanic (please specify)_____
    l. Other (please specify)_____
    m. Mixed (please specify)_____

4. What is the highest level of education you have completed?
    a. Less than high school
    b. High School degree/ GED
    c. Some college
    d. 2-year college/ Associate’s degree
    e. 4-year college/ Bachelor’s degree
    f. Postgraduate degree

5. What is your current marital status?
    a. Single, Never Married
    b. Married
    c. Separated
    d. Divorced
    e. Widowed

6. What is your religious/ spiritual affiliation?
    a. Christian
    b. Protestant
    c. Catholic
    d. Buddhist
    e. Jewish

f. Muslim
g. Hindu
h. Spiritualist *[Someone who rejects organized religion but adheres to certain universal laws, such as those items on the spiritual questionnaire (e.g., life has meaning or purpose)]*
i. Agnostic *[Someone who <u>does not CLAIM to know</u> whether or not a god exists]*
j. Atheist *[Someone who does <u>not BELIEVE a god exists</u>, and may or may not claim to know that this belief is true]*
k. Other _____

7. What is your current living arrangement?
    a. Nursing home
    b. Assisted care facility

Appendix B: *Health Questionnaire*

Health Questionnaire

Directions**: Do you have any chronic diseases you are currently experiencing?**

If participant does not self-report any diseases….

I would like to run down a list of a few diseases. Please let me know if you are suffering from any one of these diseases. All responses will be kept confidential.

[Please circle all endorsed responses below]

A. **CENTRAL NERVOUS SYSTEM**
1. Epilepsy: chronic neurological disorder characterized by seizures
2. Parkinson's Disease
3. Narcolepsy: chronic sleep disorder

B. **CARDIOVASCULAR SYSTEM**
1. Cardiac Arrhythmias: abnormal heart beat (too fast or too slow)
2. Hypertension: high blood pressure
3. Heart failure and Cardiomyopathy: deterioration of heart muscle
4. Coronary Artery Disease: accumulation of plagues in coronary arteries/ heart
5. Angina: chest pain/ lack of oxygen in heart/ heart attack
6. Hyperlipidemia: abnormally elevated lipids in the blood
7. Peripheral Vascular Disease: lack of blood in extremities
8. Endocarditis: inflammation of inner layer of heart

C. **BLOOD / CLOTTING DISORDERS**
1. Thrombocytopenia: decrease of platelets in blood
2. Cryoglobulinemia: abnormal proteins in blood
3. Hemophilia: genetic disorder that impairs body's ability to clot blood
4. Deep Vein Thrombosis: blood clot in a deep vein
5. Treatment of Iron/B12 Deficiency Anemia

D. **RESPIRATORY SYSTEM**
1. Asthma
2. Chronic Obstructive Airways Disease (Emphysema, Chronic Bronchitis, Bronchiectasis, Cystic Fibrosis): breathing problems

E. **ENDOCRINE SYSTEM**
1. Addisons Disease: problems with adrenal glands
2. Diabetes
3. Hypoparathyroidism : decreased functioning in parathyroid glands and low levels of calcium in the blood
4. Pituitary Adenomas: tumors in pituitary gland
5. Thyroid Disorder: problems with thyroid gland

6. Menopause (HRT)
7. Cancer

F. **MUSCULOSKELETAL DISORDERS**

1. Gout / Hyperuricemia: recurrent attacks/ swollen joints
2. Osteoporosis: weakening in bones which leads to susceptibility of fractures
3. Rheumatoid Arthritis: stiffness and swollen joints
4. Organ Transplants
5. Systemic Lupus Erythematosus: autoimmune disease
6. Dystonia: neurological movement disorder, twitching and repetitive movements or abnormal postures
7. Motor Neuron Disease: involuntary muscle activity (speaking, walking, breathing, swallowing, etc.)
8. Paget's Disease: large and misshapen bones that leads to chronic pain
9. Myasthenia Gravis: muscular weakness
10. Sjogren's Disease: immune system attacks glands that produce tears and saliva
11. Para/Quadriplegia: loss of functioning in extremities
12. Ankylosing Spondylitis: chronic inflammatory arthritis in spine or pelvis
13. Multiple Sclerosis: neurological disease with loss of sensitivity, difficulty moving, muscle spasms, problems with speech, etc.

G. **GASTRO INTESTINAL TRACT**

1. Peptic Ulcers : acidic and painful ache in small intestine and stomach
2. Gastro-esophageal Reflux Disorder (GORD): chronic stomach acid coming up from stomach into esophagus
3. Inflammatory Bowel Disease (Crohn's Disease / Ulcerative Colitis): abdominal pain, vomiting, diarrhea, rectal bleeding, internal cramps/muscle spasms, weight loss
4. Pancreatic Disease: inflammation in pancreas
5. Post Bowel Surgery

H. **GENITO-URINARY DISORDERS**

1. Chronic Renal Failure: loss of renal/ kidney function
2. Chronic Urinary Tract Infection
3. Benign Prostate Hypertrophy: problems with storage and maintenance of urine

I. **OTHERS NOT LISTED ABOVE**

_____
_____
_____
_____

Appendix C: *Mental State Exam, Six-Item Screener*

Six-Item Screener

I would like to ask you some questions that ask you to use your memory. I am going to name three objects. Please wait until I say all three words, then repeat them. Remember what they are because I am going to ask you to name them again in a few minutes.

Please repeat these words for me *(Interviewer may repeat names 3 times if necessary but repetition not scored.)*:

APPLE – TABLE – PENNY

Did patient correctly repeat all three words?	Yes	No
	Incorrect	Correct
1. **What year is this?**	0	1
2. **What month is this?**	0	1
3. **What is the day of the week?**	0	1

What were the three objects I asked you to remember?

		Incorrect	Correct
4. Apple =	_____	0	1
5. Table =	_____	0	1
6. Penny =	_____	0	1

Appendix D: *Measure of Fear of Death and Approach Acceptance of Death Attitudes, Death Attitude Profile-Revised (DAP-R)*

Death Attitude Profile-Revised (DAP-R)

I would like to ask you a few questions in regards to your attitudes toward death. I will read a number of statements related to different attitudes toward death and please rate them as either: Strongly Agree, Agree, Moderately Agree, Undecided, Moderately Disagree, Disagree, or Strongly Disagree.

1. **Death is no doubt a grim experience.**
   1) Strongly Agree
   2) Agree
   3) Moderately Agree
   4) Undecided
   5) Moderately Disagree
   6) Disagree
   7) Strongly Disagree

2. **The prospects of my own death arouses anxiety in me.**
   1) Strongly Agree
   2) Agree
   3) Moderately Agree
   4) Undecided
   5) Moderately Disagree
   6) Disagree
   7) Strongly Disagree

4. **I believe that I will be in heaven after I die.**
   1) Strongly Disagree
   2) Disagree
   3) Moderately Disagree
   4) Undecided
   5) Moderately Agree
   6) Agree
   7) Strongly Agree

7. **I am disturbed by the finality of death.**
   1) Strongly Agree
   2) Agree
   3) Moderately Agree
   4) Undecided
   5) Moderately Disagree
   6) Disagree
   7) Strongly Disagree

8. Death is an entrance to a place of ultimate satisfaction.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

13. I believe that heaven will be a much better place than this world.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

15. Death is a union with God and eternal bliss.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

16. Death brings a promise of a new and glorious life.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

18. I have an intense fear of death.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

20. The subject of life after death troubles me greatly.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

21. The fact that death will mean the end of everything as I know it frightens me.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

22. I look forward to a reunion with my loved ones after I die.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

25. I see death as a passage to an eternal and blessed place.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

27. Death offers a wonderful release of the soul.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

28. One thing that gives me comfort in facing death is my belief in the afterlife.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

31. I look forward to life after death.

1) Strongly Agree
2) Agree
3) Moderately Agree
4) Undecided
5) Moderately Disagree
6) Disagree
7) Strongly Disagree

32. The uncertainty of not knowing what happens after death worries me.

1) Strongly Disagree
2) Disagree
3) Moderately Disagree
4) Undecided
5) Moderately Agree
6) Agree
7) Strongly Agree

Scoring Key for the Death Attitude Profile-Revised

Dimension	Items
Fear of Death (7 items)	1,2,7,18,20,21,32
Approach Acceptance (10 items)	4,8,13,15,16,22,25,27,28,31

Scores for all items are from 1 to 7 in the direction of *strongly disagree (1)* to *strongly agree (7)*. For each dimension, a mean scale score can be computed by dividing the total scale score by the number of items forming each scale.

Appendix E: *Measure of Physical Functioning, The Medical Outcomes Study 36-Item Short-form Health Survey (SF-36; Physical Functioning Index)*

The Medical Outcomes Study 36-Item Short-form Health Survey (SF-36; Physical Functioning Index)

The following items are about activities you might do during a typical day. Does *your health now limit you* in these activities? If so, how much?

(Check One Box on Each Line)

	Yes, Limited a lot 1	Yes, Limited a little 2	Not limited at all 3
a. *Vigorous activities*, such as running, lifting heavy objects, riding bicycles, participating in strenuous sports	☐	☐	☐
b. *Moderate activities*, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf, swimming, or other water exercises	☐	☐	☐
c. Lifting or carrying groceries	☐	☐	☐
d. Climbing *several* flights of stairs	☐	☐	☐
e. Climbing *one* flight of stairs…	☐	☐	☐
f. Bending, kneeling, or stooping.	☐	☐	☐
g. Walking *more than a mile*	☐	☐	☐
h. Walking *several blocks*	☐	☐	☐
i. Walking *one block*	☐	☐	☐
j. Bathing or dressing yourself	☐	☐	☐

Appendix F: *Measure of Self-Rated Health, The Years of Life Scale (YOHL)*

The Years of Life Scale (YOHL; Erikson, Wilson, Shannon, 1995)

In general, would you say your health is:
1 ☐Excellent
2 ☐Very Good
3 ☐Good
4 ☐Fair
5 ☐Poor

Appendix G: *Measure of Depression, Geriatric Depression Scale (GDS)*

Geriatric Depression Scale (GDS)

How have you have felt over the past month? *(Please circle YES or NO)*

1. Are you basically satisfied with your life? YES / **NO**

2. Have you dropped many of your activities and interests? **YES** / NO

3. Do you feel that your life is empty? **YES** / NO

4. Do you often get bored? **YES** / NO

5. Are you in good spirits most of the time? YES / **NO**

6. Are you afraid that something bad is going to happen to you? **YES** / NO

7. Do you feel happy most of the time? YES / **NO**

8. Do you often feel helpless? **YES** / NO

9. Do you prefer to stay at home, rather than going out and doing new things? **YES** / NO

10. Do you feel you have more problems with memory than most? **YES** / NO

11. Do you think it is wonderful to be alive now? YES / **NO**

12. Do you feel pretty worthless the way you are now? **YES** / NO

13. Do you feel full of energy? YES / **NO**

14. Do you feel that your situation is hopeless? **YES** / NO

15. Do you think that most people are better off than you are? **YES** / NO

Total Bolded Responses: _____ / 15

Appendix H: *Measure of Anxiety, Zung Self-Rating Anxiety Scale (SAS)*

Zung Self-Rating Anxiety Scale (SAS)

I would like to ask you a few questions about how you've been feeling over the past week. I will read several statements and please indicate which best describes how you have felt or behaved.

Place check mark (✓) in correct column.	**None or A little of the time**	**Some of the time**	**Good part of the time**	**Most or all of the time**
1) I feel more nervous and anxious than usual.				
2) I feel afraid for no reason at all.				
3) I get upset easily or feel panicky				
4) I feel like I'm falling apart and going to pieces.				
5) I feel that everything is all right and nothing bad will happen.				
6) My arms and legs shake and tremble.				
7) I am bothered by headaches neck and back pain.				
8) I feel weak and get tired easily.				
9) I feel calm and can sit still easily				
10) I can feel my heart beating fast.				
11) I am bothered by dizzy spells.				
12) I have fainting spells or feel like it.				
13) I can breathe in and out easily.				
14) I get feelings of numbness and tingling in my fingers & toes.				
15) I am bothered by stomach aches or indigestion.				
16) I have to empty my bladder often.				
17) My hands are usually dry and warm.				
18) My face gets hot and blushes.				
19) I fall asleep easily and get a good night's rest.				
20) I have nightmares.				

Appendix I: *Measure of Affective Social Support, Duke-UNC Functional Social Support Questionnaire*

Duke-UNC Functional Social Support Questionnaire

HERE IS A LIST OF SOME THINGS THAT OTHER PEOPLE DO FOR US OR GIVE US THAT MAY BE HELPFUL OR SUPPORTIVE. PLEASE INDICATE WHAT IS CLOSEST TO YOUR SITATION FOR THE FOLLOWING STATEMENTS.

HERE IS AN EXAMPLE: I get... enough vacation time	As much as I would like				Much less than I would like
	.	. ✓	.	.	.
	1	2	3	4	5

If you put a check where we have, it means that you get almost as much vacation time as you would like, but not quite as much as you would like.

ANSWER EACH ITEM AS BEST YOU CAN. THERE ARE NO RIGHT OR WRONG ANSWERS.

I get...	As much as I would like				Much less than I would like
5. people who care what happens to me	. 1	. 2	. 3	. 4	. 5
6. love and affection	. 1	. 2	. 3	. 4	. 5
14. help when I'm sick in bed	. 1	. 2	. 3	. 4	. 5

Appendix J: *Measure of Interactive and Dependent Social Support, Older American Resources & Services Questionnaire (OARS)*

OARS (Older American Resources & Services Questionnaire)

Social Interaction Measure

8. How many people do you know well enough to visit with in their homes?

3 Five or more
2 Three or four
1 One or two
0 None
- Not answered

9. About how many times did you talk to someone--friends, relatives, or others via text, Skype, E-mail, etc. in the past week?

3 Once a day or more
2 2-6 times
1 Once
0 Not at all
- Not answered

10. How many times in the past week did you visit with someone, either with people who live here or people who visited you here?

3 Once a day or more
2 2-6 times
1 Once
0 Not at all
- Not answered

Social Dependence Measure

11. Do you have someone you can trust and confide in?

1 Yes
0 No
- Not answered

14. Is there someone outside this place who would give you any help at all if you were sick or, disabled, for example your husband/wife, a member of your family, or a friend?

1 Yes
0 No one willing and able to help
- Not answered

Appendix K: *Measures of Self-efficacy and Life Scheme, Spirituality Index of Well-Being (SIWB)*

Spirituality Index of Well-Being

[First 6 items measure Self-efficacy and last 6 items measure Life scheme]

Which response best describes how you feel about each statement?

Strongly Agree	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
1	**2**	**3**	**4**	**5**
There is not much I can do to help myself.				
1	2	3	4	5
Often, there is no way I can complete what I have started.				
1	2	3	4	5
I can't begin to understand my problems.				
1	2	3	4	5
I am overwhelmed when I have personal difficulties and problems.				
1	2	3	4	5
I don't know how to begin to solve my problems.				
1	2	3	4	5
There is not much I can do to make a difference in my life.				
1	2	3	4	5
I haven't found my life's purpose yet.				
1	2	3	4	5
I don't know who I am, where I came from, or where I am going.				
1	2	3	4	5
I have a lack of purpose in my life.				
1	2	3	4	5
In this world, I don't know where I fit in.				
1	2	3	4	5
I am far from understanding the meaning of life.				
1	2	3	4	5
There is a great void in my life at this time.				
1	2	3	4	5

Appendix L: *Measures of Intrinsic Religiosity (Strength of belief and Closeness to God/ Higher Force)*

Intrinsic Religiosity Questions

How strongly religious or spiritually oriented do you consider yourself?	Strong Not at all 1 2 3 4
How close do you feel to God/ Higher Force?	I don't believe in God Extremely close to God 1 2 3 4

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